Community Presentations

New England PFAS Community Engagement Event

June 25, 2018
Exeter High School, Exeter, NH
5:30 PM

TESTING *for* PEASE

The PFAS Contamination at Pease: A Community Perspective

EPA Region 1 PFAS Summit | Exeter, NH | June 25, 2018

Andrea Amico, Alayna Davis, Michelle Dalton

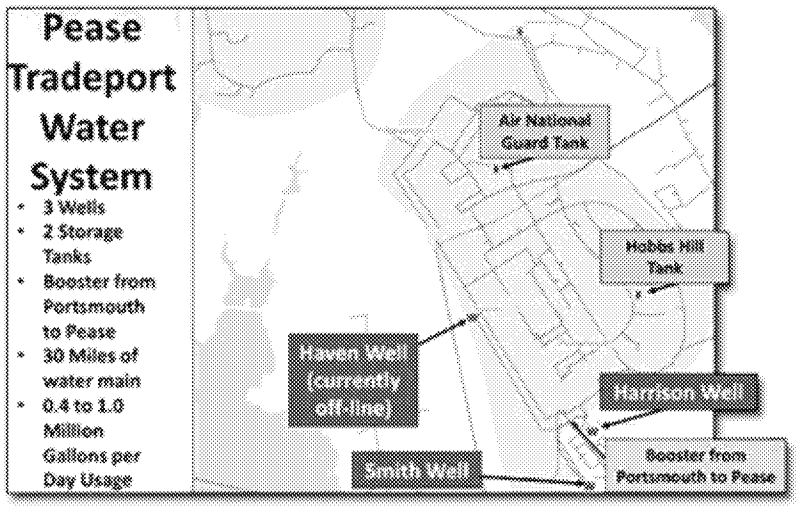
Who is Testing for Pease?

Testing for Pease is a community action group, whose mission is to be a reliable resource for education and communication while advocating for a long-term health plan on behalf of those impacted by the PFAS water contamination at the former Pease Air Force Base in Portsmouth, NH

From left to right: Alayna, Andrea & Michelle

Why Did We Form?

- May 2014 – newspaper revealed that PFAS contamination was discovered in three wells supplying drinking water to the Pease International Tradeport (former Pease Air Force Base)
- One well (Haven well) tested over the EPA PHAs that were in place at that time (PFOS = 2500 ppt)
- All of our families were exposed to contaminated public drinking water at Pease

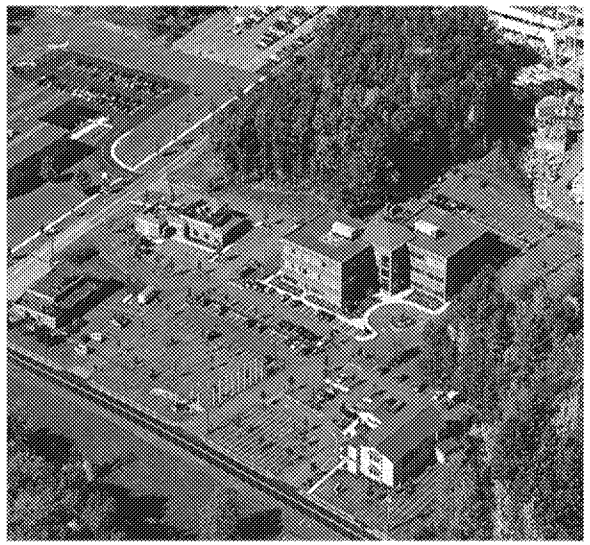


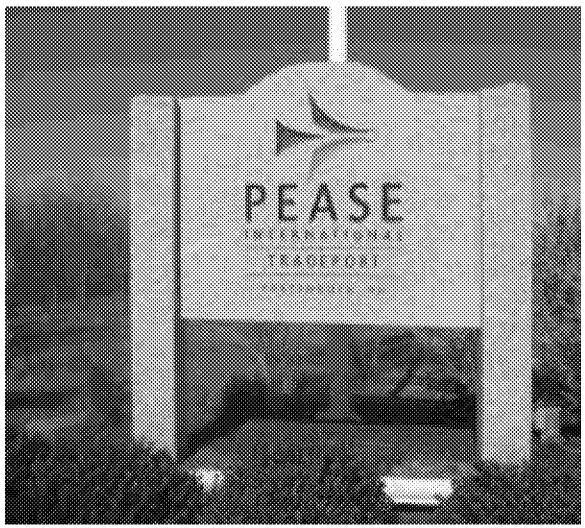
History of the Pease Air Force Base

- 1956 to 1991 Strategic Air Command (SAC) Base
- 4,365 acres of land with 3 on site wells
- In 1989 there were ~4500 total employees on Pease (active-duty military, civil service workers and non-appropriated fund employees)
- In 1990 military personnel began leaving the base
- In 1991 Pease AFB closed and became the first base in the nation to be closed under BRAC
- In 1991 Pease became a Superfund site

History of the Pease Tradeport

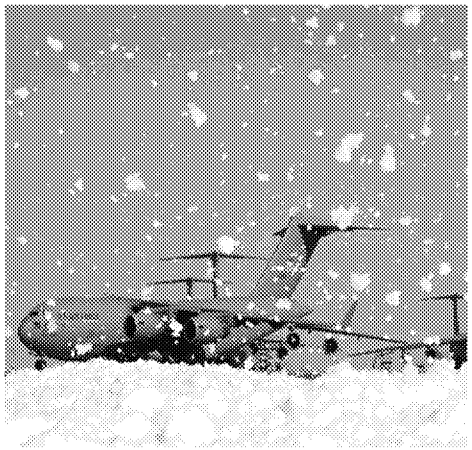
- Pease International Tradeport started development in 1991
- 3 wells supply drinking water (Haven, Smith, & Harrison)
- Currently home to ~ 250 businesses and still growing
  - 2 large daycare centers
  - Restaurants
  - Healthcare/medical office buildings
  - Multiple colleges
  - Golf course
- ~9,525 people employed on Pease daily
- Portsmouth International Airport (PSM) currently in operation





How was Pease Contaminated with PFAS?

- Pease drinking water became contaminated with PFASs by a fire fighting foam known as AFFF (Aqueous Film Forming Foam)
- Used by the Air Force since the 1970's
- 21 areas identified where AFFF was used, stored, or released on Pease
- AFFF used because it is effective in putting out petroleum based fires

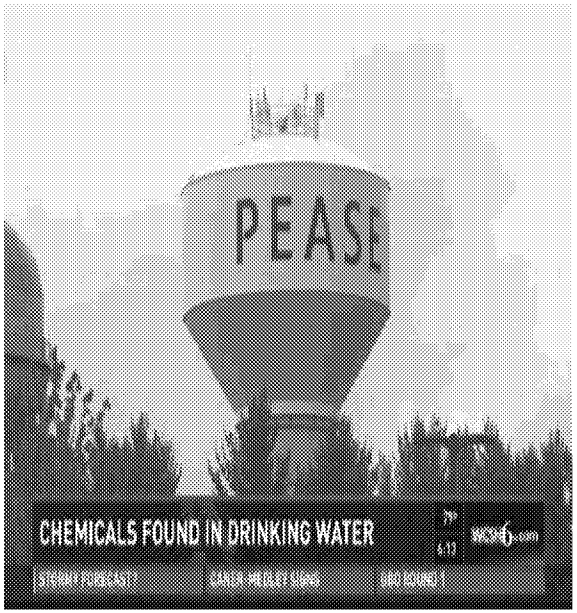


What PFAS are detected in the Pease water?

- PFAS first tested in drinking water at Pease in April & May of 2014:
  PFOS = 2500 ppt
  PFOA = 350 ppt
  PFHxS = 960 ppt

- Multiple other PFAS detected in drinking water at low levels at Pease

- Community is concerned about **all** the PFAS in the drinking water despite lack of health advisories



TIMELINE OF EVENTS: 2015

- Blood testing program open to anyone exposed to contaminated drinking water prior to 2014 (almost 2000 people blood tested to date)
- CAB (Community Advisory Board) established through City of Portsmouth –
  14 community meetings held between May and December

- EPA places strict order on AF to clean up the PFAS contamination at Pease
- US AF agrees to remediate all three wells on Pease
- Pease community meets with ATSDR for the first time and discusses forming a CAP

TIMELINE OF EVENTS: 2016

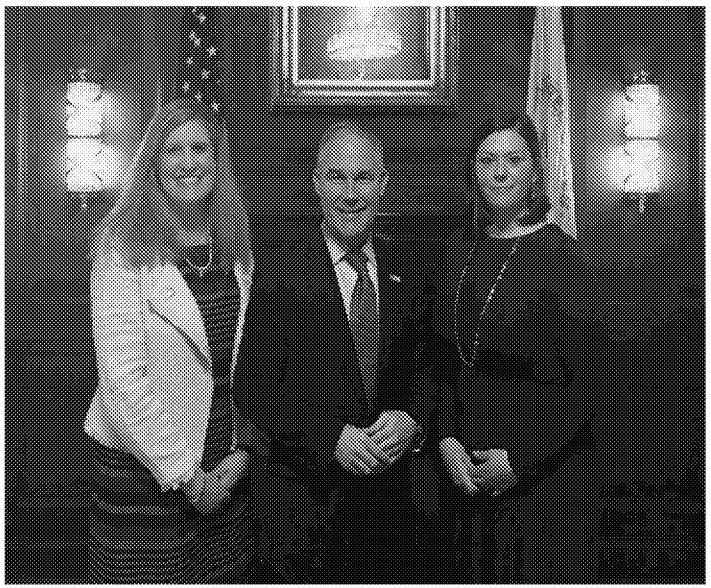
- Blood testing results reveal elevated levels of PFASs for members of Pease community
- ATSDR recruits and forms Pease Community Assistance Panel (CAP)
- US AF recruits and forms Pease Restoration Advisory Board (RAB) - quarterly meetings open to the public
- US EPA lowers PHA for PFOS & PFOA to 70 ppt combined – Lowered from 600 ppt (200 ppt for PFOS & 400 ppt for PFOA)
- 2 large GAC filters placed on the Smith & Harrison wells at Pease

TIMELINE OF EVENTS: 2017

- ATSDR releases Feasibility Assessment re: possible health studies at Pease
- US Senator Jeanne Shaheen successfully includes amendment in the NDAA authorizing DoD to fund a nationwide study on impacts of PFAS
- Ongoing remediation efforts at Pease by US Air Force to clean up groundwater
- PFAS Conference at Northeastern University in Boston - community groups, scientists, policy makers, and others come together/ collaborate
- Formation of national coalition as result of the networking done at the PFAS conference with multiple community leaders from many different states across the country

TIMELINE OF EVENTS: 2018

- US Senator Jeanne Shaheen successful in appropriating $10 million for a multi-site PFAS health study by ATSDR for FY2018
- ATSDR announces Pease will be the first community to participate in the multi-site PFAS health study
- TFP co-founder attends EPA National PFAS Summit in DC; meets EPA Administrator Pruitt
- US Senator Maggie Hassan speaks at briefing in D.C. highlighting the need to address concerns/protect drinking water from PFAS & other emerging contaminants



Challenges We Have Faced

- Unregulated contaminants – communities still being exposed/Lack of PHAs for many other PFAS still present in drinking water
- Community has to advocate to be seen as critical stakeholders and push for progress, research, guidelines - government moves slow
- Need for medical monitoring program with limited support at state and federal level
- Physicians need PFAS education to help patients be proactive in protecting health
- Lack of funding is major roadblock in testing and making decisions for public safety at state/federal level
- Inconsistent messaging from government agencies - told health effects are inconclusive/getting blood tested not recommended, yet many scientific studies contradict (need to protect most vulnerable)
- Limited labs capable of testing water and blood = testing is not easily accessible, time consuming and expensive
- Difficulty streamlining communication between multiple agencies and community

Positive Aspects

- Engagement and collaboration with other PFAS impacted community groups across the US
- Developed relationships with multiple government agencies and elected officials
- GAC treatment on two of the Pease wells w/ongoing remediation efforts
- Working with highly respected doctors, epidemiologists, scientists & environmental health experts
- Opportunity for grants to support community efforts and pursue additional water testing
- ATSDR Multi-Site PFAS Health study with Pease to be first community studied
- Media has been critical in raising awareness and promoting accountability

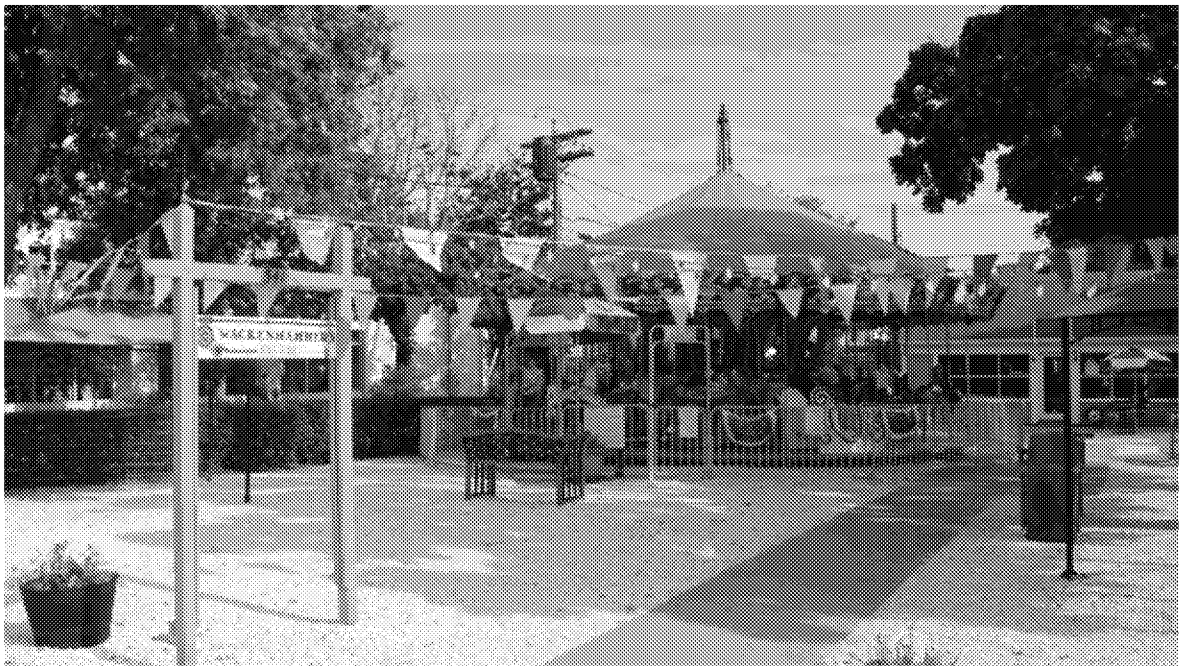
Thank you for listening…

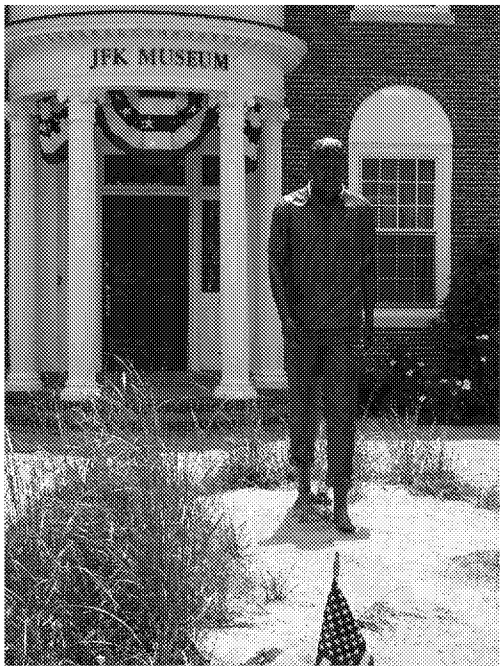
"Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever has."

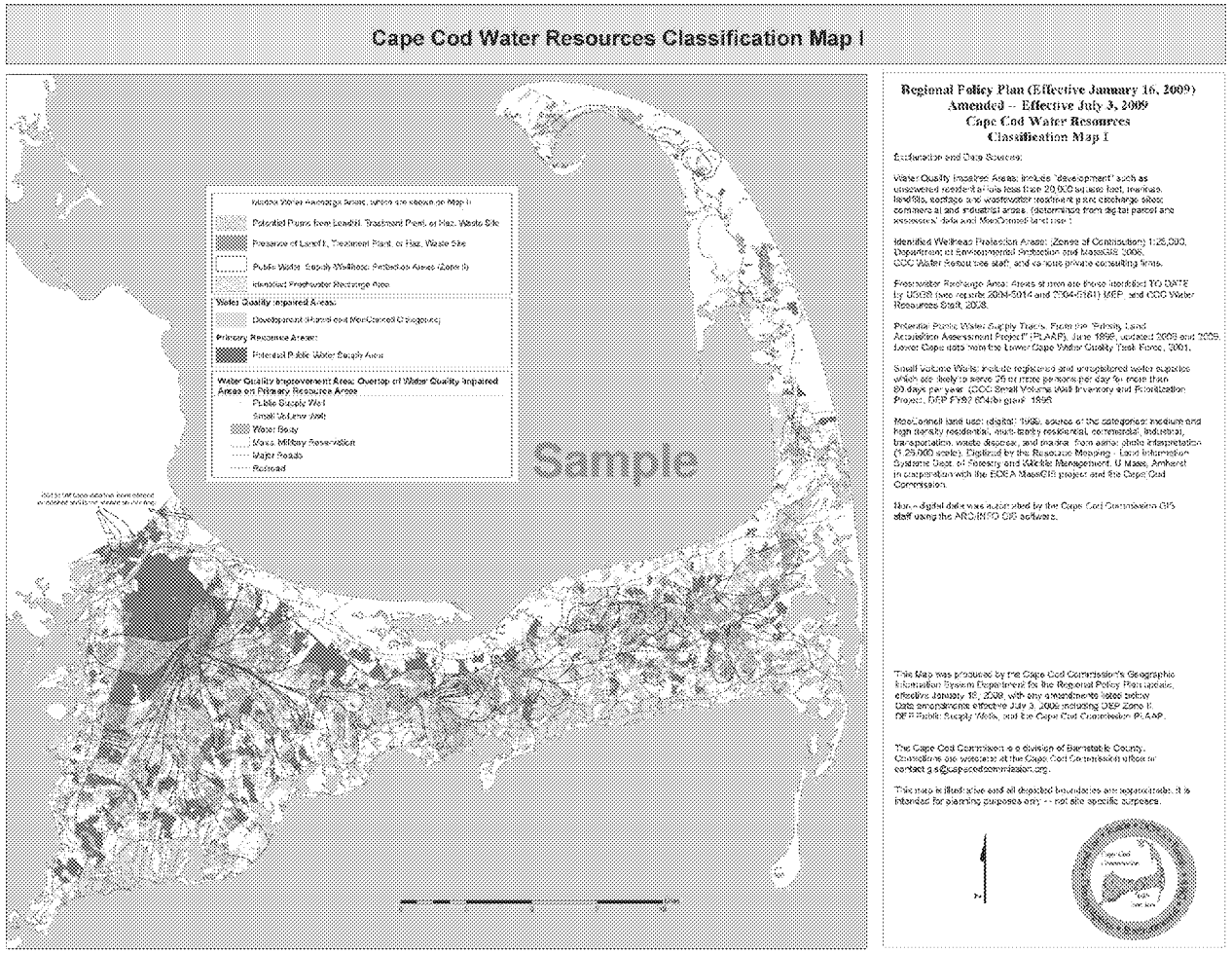
~ Margaret Mead

www.testingforpease.com

MAIN STREET HYANNIS ON CAPE COD




JFK MUSEUM

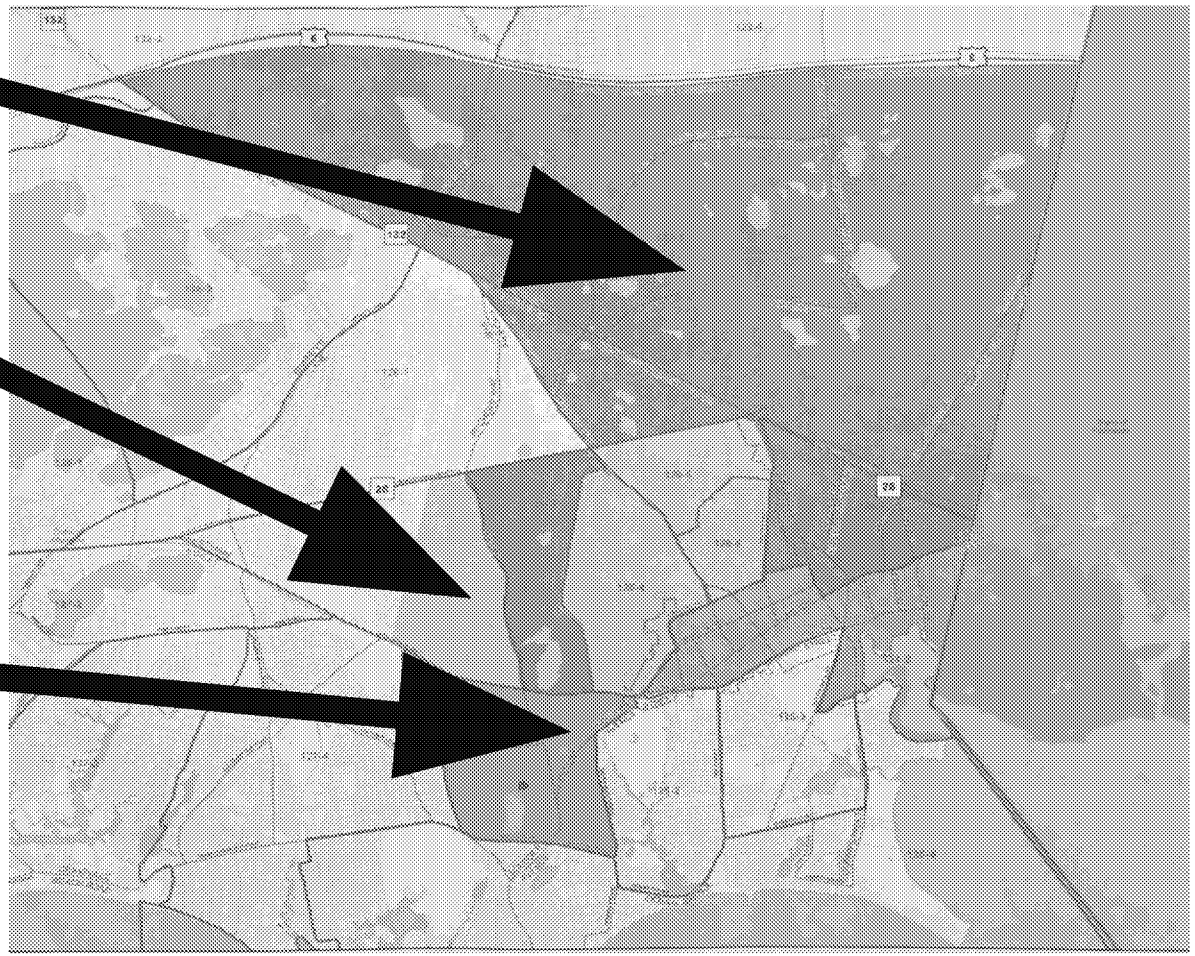


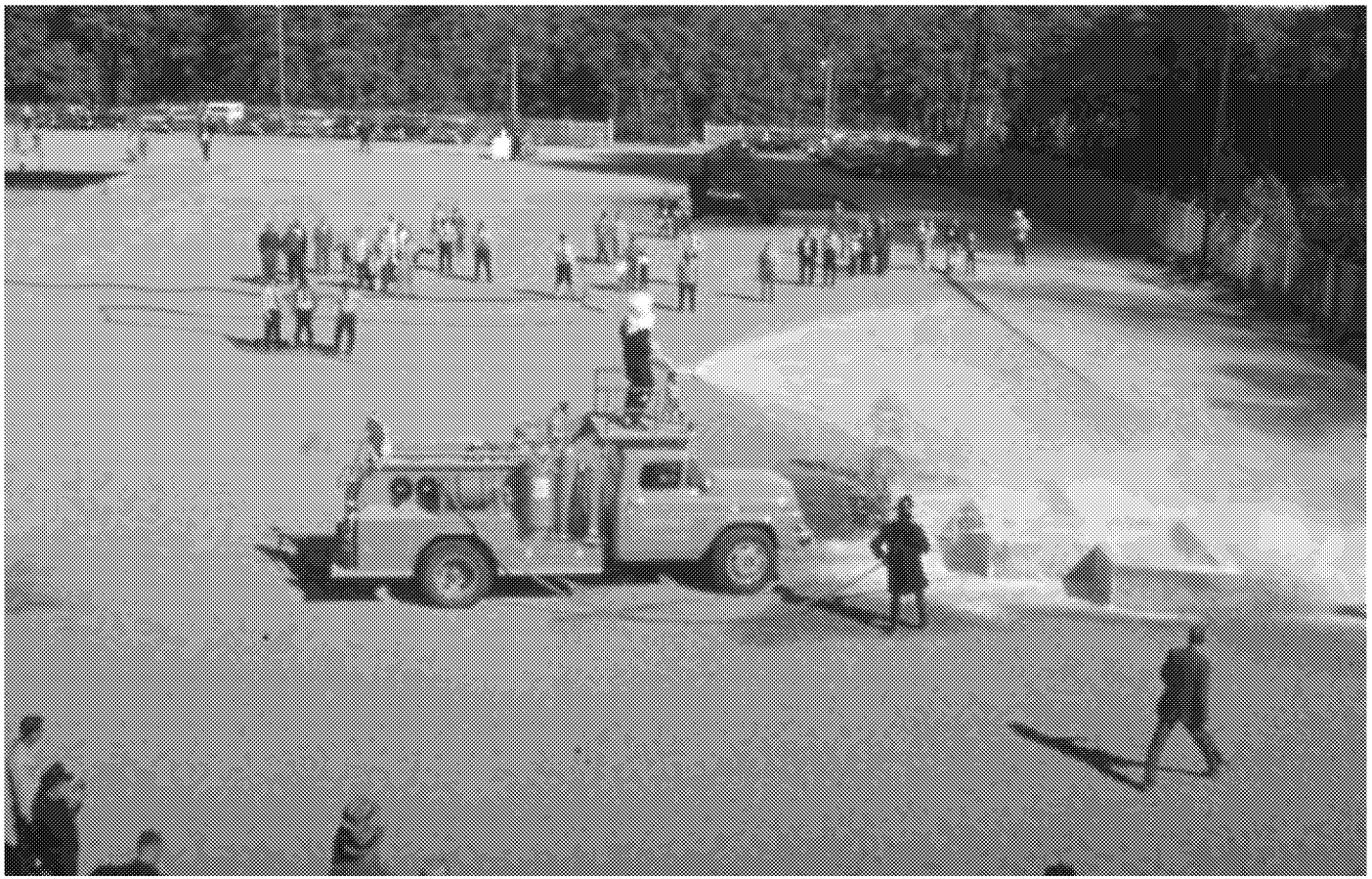
EPA DESIGNATED SOLE SOURCE AQUIFER NO OTHER VIABLE SOURCE OF WATER

GREEN
ENVIRONMENTAL JUSTICE
POPULATION
INCOME AND MINORITY

YELLOW
ENVIRONMENTAL
JUSTICE
POPULATION
INCOME

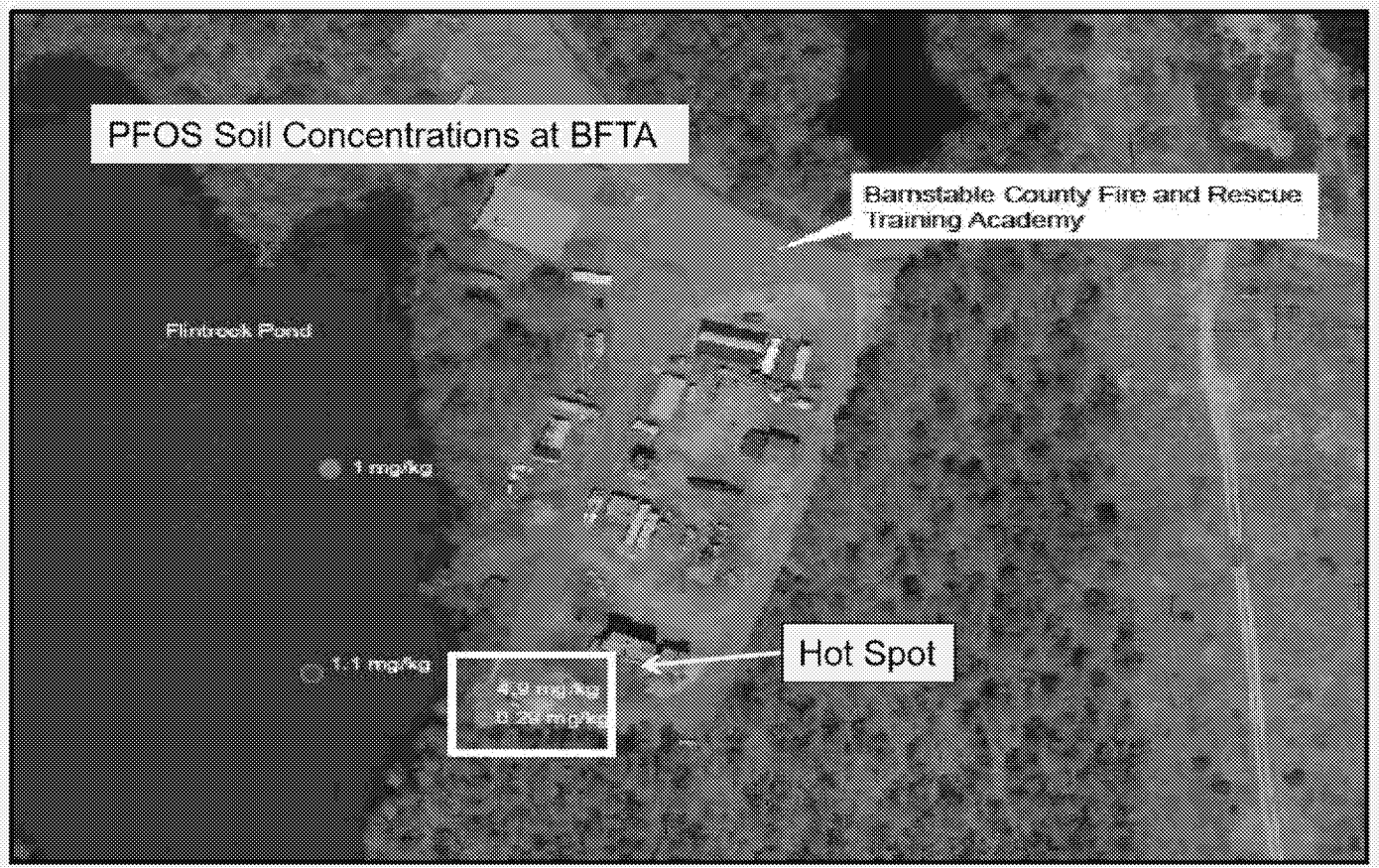
BROWN
ENVIRONMENTAL
JUSTICE
POPULATION
MINORITY



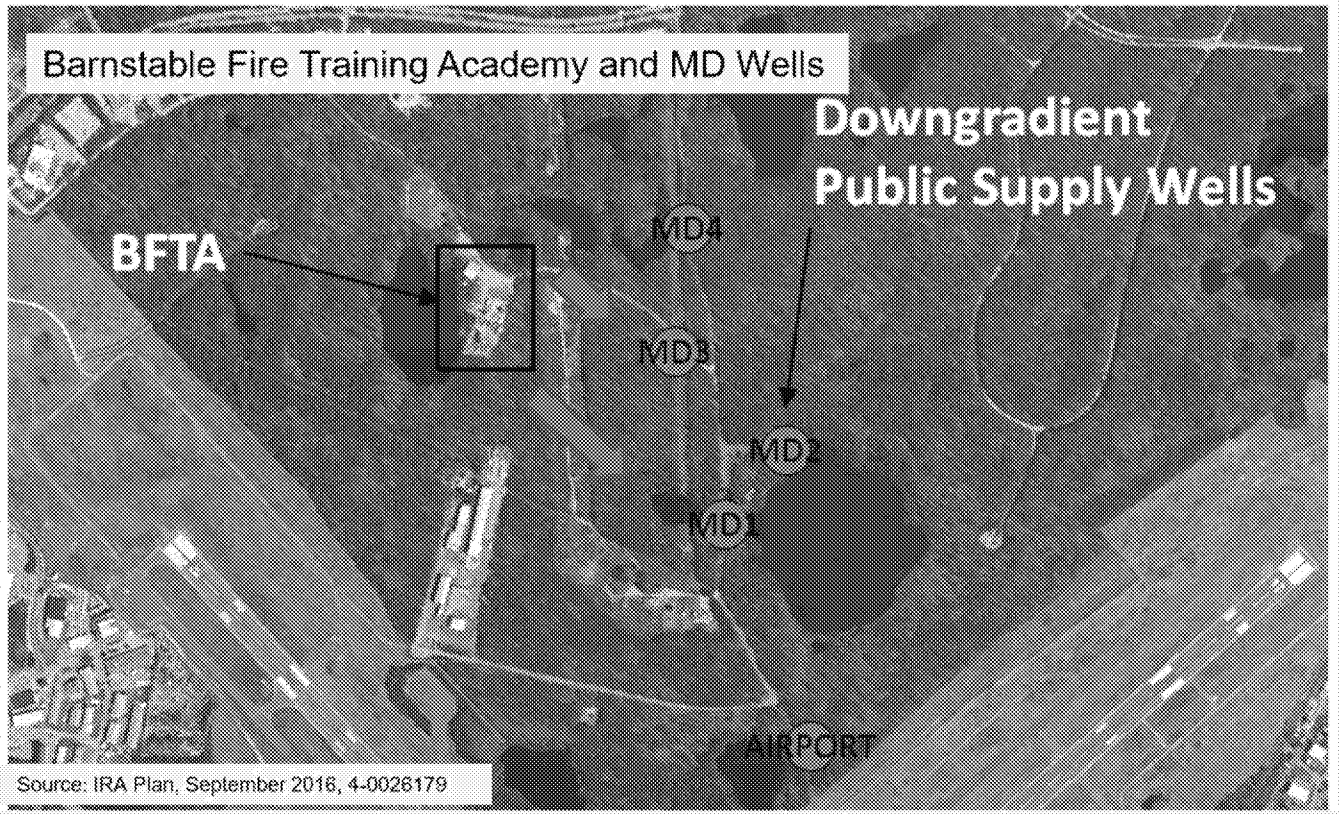


OPENING OF THE BARNSTABLE COUNTY FIRE AND RESCUE TRAINING ACADEMY 1959

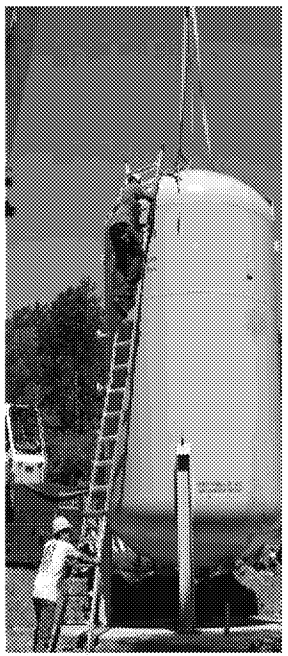
PFAS Case Study Example #1, cont.
Mary Dunn Water Supply Wells

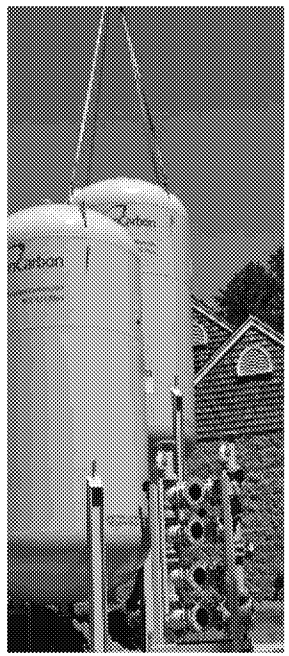


PFAS Case Study Example #1, cont.
Mary Dunn Water Supply Wells



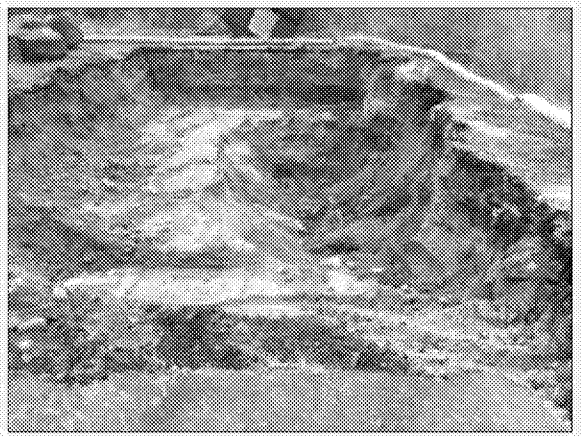
GAC TREATMENT INSTALLED





PFAS Case Study Example #1, cont. Mary Dunn Water Supply Wells

- IRA Status Report 2-28-2017
  - Soil excavation completed on 1-27-2017 (5' and 10')
    - Pre- and post-treatment soil samples
    - 297 tons of excavated PFAS soil disposed at lined landfill in Massachusetts under BOL
  - Remedial Additive applied to bottom of excavation



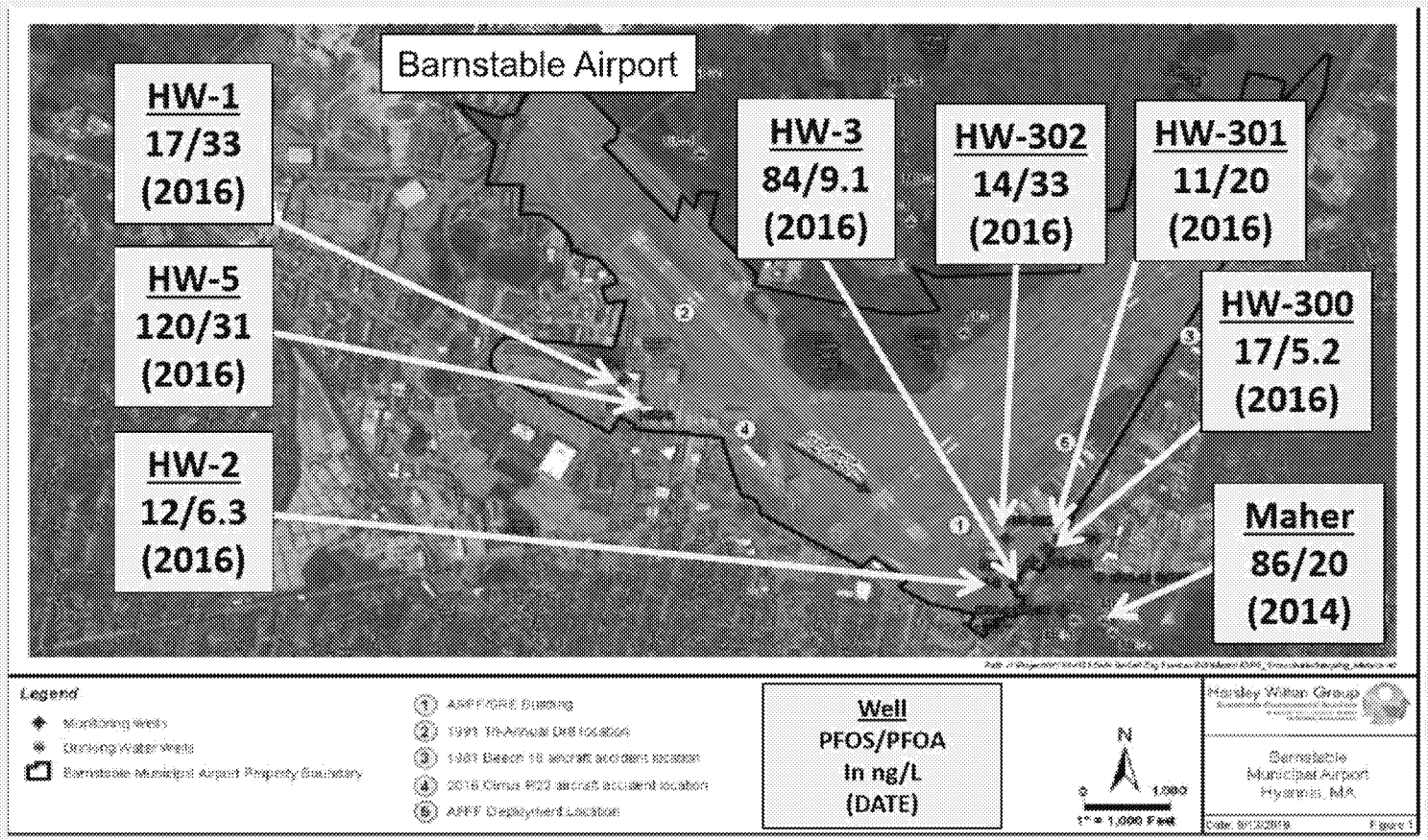
PFAS Case Study Example #1
Mary Dunn Water Supply Wells

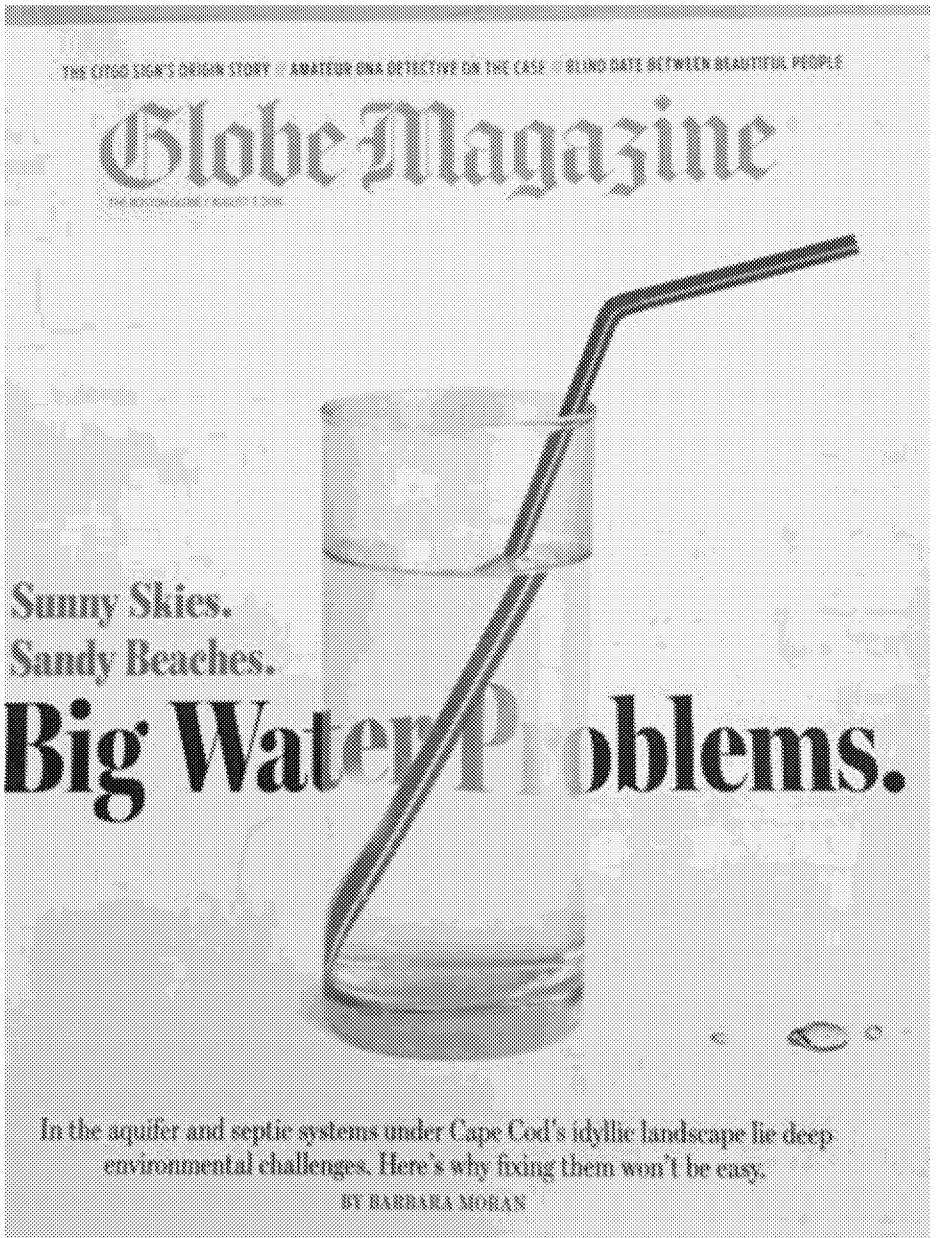
- UCMR3 data – PFOS > PHA in 2013/2014
  (PFOA – 0.4 µg/L; PFOS – 0.2 µg/L)
  - Wells taken off line (off-season)
  - GAC system installed and working as of July 2015

Analyte	PHA	MD 1		MD 2		MD 3	
		11/20/2013	5/22/2014	11/20/2013	5/22/2014	11/20/2013	5/22/2014
PFOS	0.2	0.19	0.098	0.17	**0.43**	0.11	**0.21**
PFOA	0.4	<0.02	<0.02	0.02	0.062	<0.02	0.02
Total	NA	0.19	0.098	0.19	0.49	0.11	0.23

Results are in µg/L

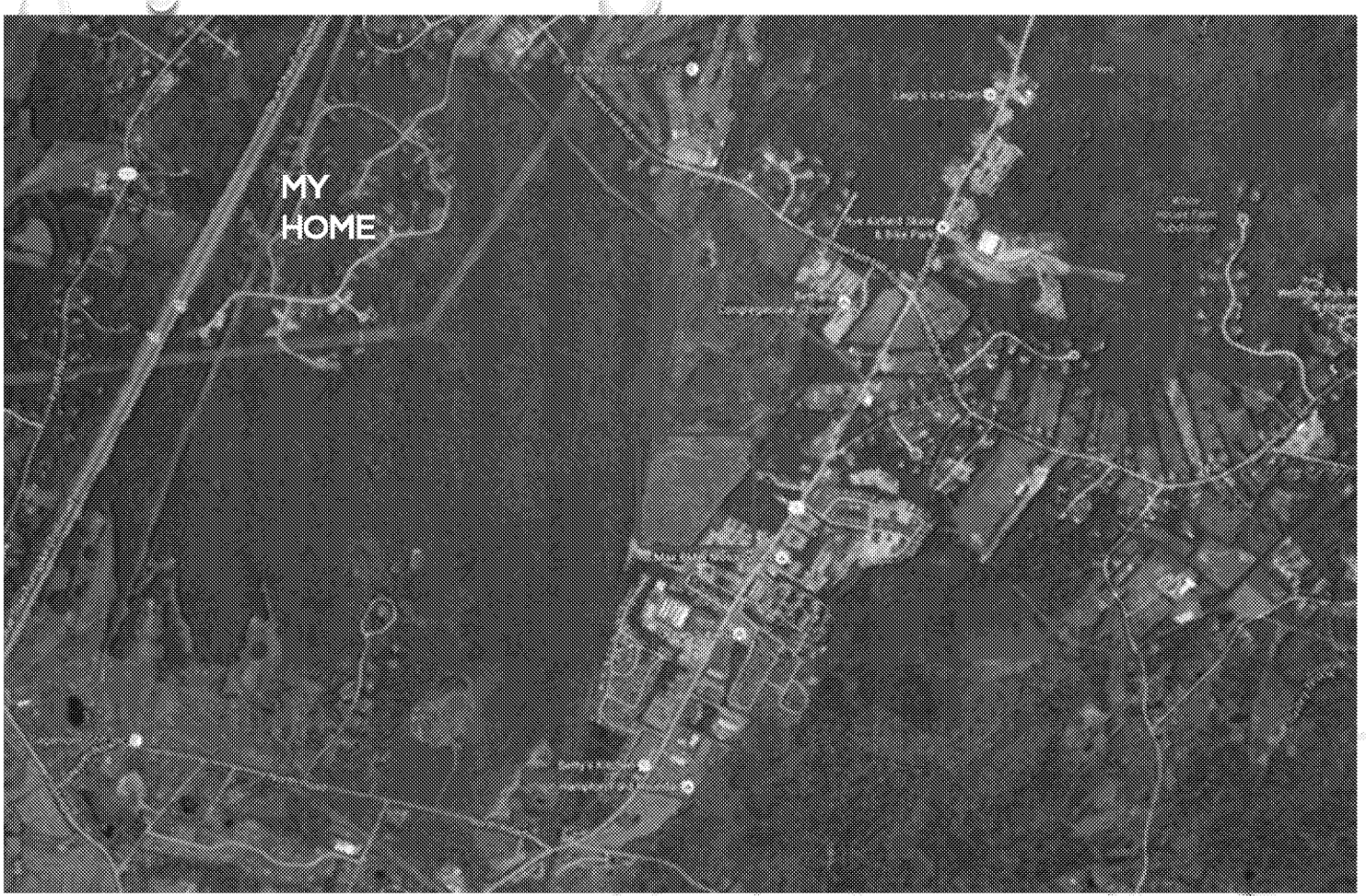
PFAS Case Study Example #2, cont.
Maher Public Water Supply Wells





"WHEN YOU LIVE ON WHAT'S ESSENTIALLY A SANDBAR, POLLUTION, SEPTIC SYSTEMS, AND POLITICAL ROADBLOCKS ADD UP TO ONE TOUGH CHALLENGE."

COAKLEY LANDFILL SUPERFUND SITE

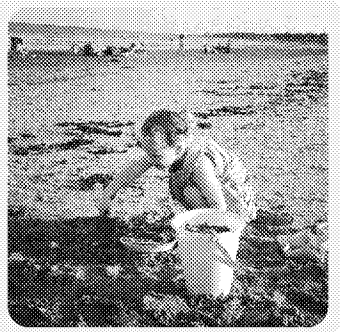


GREENLAND, NH ~ SEACOAST
POPULATION 3,892

MY STORY

MOVED TO NH SEACOAST IN 2010

MY HUSBAND AND I WANTED TO RAISE OUR DAUGHTERS WHERE I HAD GROWN UP, NEAR EXTENDED FAMILY. WE BUILT OUR DREAM HOME ON A BEAUTIFUL WOODED LOT IN GREENLAND.



CANCER CLUSTER ON THE NH SEACOAST

IN FEBRUARY 2016, A DOUBLE PEDIATRIC CANCER CLUSTER, INVOLVING 2 RARE FORMS OF CANCER, RMS AND PPB, WAS REPORTED IN 5 TOWNS ON THE NH SEACOAST. COAKLEY IS GEOGRAPHICALLY CENTRAL TO THESE TOWNS.

GREENLAND
Safe Water Action

WORKING TO PROTECT MY FAMILY & NEIGHBORS

IT WAS DEVASTATING TO LEARN ABOUT THE BEAST IN MY BACKYARD. MY NEIGHBORS AND I FORMED THE GREENLAND SAFE WATER ACTION. WE WON'T STOP FIGHTING FOR ACCESS TO SAFE, ABUNDANT WATER.

WHEN CONTAMINATION WAS DISCOVERED

- IN JUNE 2016, PFAS WERE DETECTED ONSITE IN MONITORING WELLS BY THE PRP, COAKLEY LANDFILL GROUP (CLG). LEVELS WERE OVER 1,000 PPT.
- IN DECEMBER 2016, CONSERVATION LAW FOUNDATION (CLF) DETECTED PFAS CONTAMINANTS OFFSITE, LEACHING IN TO THE HEADWATERS OF BERRY'S BROOK, WHICH WINDS THROUGH OUR SEACOAST TOWNS TO THE OCEAN.
- NHDES CONDUCTED THEIR OWN TESTING AND DISCOVERED EVEN HIGHER RESULTS UPWARDS OF 1,250 PPT PFOA AND PFOS LEACHING OFF SITE IN TO SURFACE WATER.

Photos courtesy of Seacoast Media Group

DETECTION LEVELS: MONITORING WELLS

Sample ID	Sample Date	PFC Concentration (ng/L)						
		PFOA	PFOS	PFBS	PFHpA	PFHxS	PFNA	Total PFAS
GW-BP-4	5/24/16	57.6	13.3	2.72	26.2	12.1	1.55	**113.47**
	4/26/17	62.3	ND	ND	27.4	ND	ND	**89.7**
	9/13/17	48.6	ND	ND	22.8	ND	ND	**71.4**
GW-MW-11	5/25/16	693	308	10.8	423	60.2	84.9	1579.9
	5/1/17	799	318	ND	401	68.8	73.4	1660.2
	9/19/2017	809	273	ND	401	58.2	86.7	1627.9
GW-MW-4	5/24/16	756	30.8	5.06	440	40.4	19.3	1291.56
	5/1/17	1240	55.8	ND	707	35.7	59.8	2098.3
	9/18/17	887	25.5	ND	427	40.5	25.5	1405.5
GW-MW-4 Dup	5/24/16	728	31	4.96	441	32.8	19.4	1257.16
	5/1/17	1050	60.6	ND	709	31.3	54.5	1905.4
	9/18/17	887	25.5	ND	427	40.5	25.5	1405.5
GW-MW-5D	5/25/16	61.2	29.3	27.5	44.8	42.9	ND	**205.7**
	4/27/17	119	23.9	29.2	47.8	49	ND	**268.9**
	9/18/17	84.1	25.2	31.9	49.5	42.9	NA	**233.6**
GW-MW-5S	5/24/16	647	84	10.1	468	58.6	62.6	1330.3
	4/27/17	849	89.5	ND	448	71.1	50.9	1508.5
	9/15/17	689	70.3	ND	430	62.3	63.8	1315.4
GW-MW-8	5/24/16	262	212	30.8	179	93.6	5.36	**782.76**
	4/25/17	435	224	29.6	194	120	ND	1002.6
	9/12/17	326	237	25.8	171	87.3	ND	**847.1**
GW-MW-9	5/24/16	656	452	3.53	345	17.9	169	1643.43
	4/25/17	386	429	ND	135	ND	128	1078
	9/19/2017	744	444	ND	435	39	165	1827
GW-MW-11	May-16	693	308	10.5	423	60.2	84.9	1579.6
	5/1/2017	799	318	ND	401	68.8	73.4	1660.2
	9/19/2017	809	273	ND	401	58.2	86.7	1627.9

DETECTION LEVELS: SURFACE WATER

Sample ID	Sample Date	Location	PFC Concentration (ng/L)										
			PFOA	PFOS	PFBS	PFHpA	PFHxS	PFHxA	PFNA	PFBTA	PFDA	PFPEA	TOTAL PFAS
NHDES													
CLK_SW10	12/20/16	Berry Brook 1	210	87	ND	86	9.7	42	43	16	13	21	**527.7**
	12/20/16	Berry Brook 2	220	88	ND	92	6.5	46	37	16	15	23	**543.5**
CLK_SW11	12/20/16	Berry Brook 3	240	71	ND	110	7.8	48	42	18	7.6	26	**570.4**
CLK_SW12	12/20/16	Berry Brook 4	310	100	ND	130	9.2	62	54	20	7.6	31	**723.8**
CLK_SW13	12/20/16	Berry Brook 5	850	400	5.4	410	19	220	170	72	40	140	2326.4
CLK_SW14	12/20/16	Berry Brook 6	73	17	ND	37	ND	19	11	ND	ND	9.3	**166.3**
Coakley Landfill Group/ CES													
SW-4	5/2/17		129	36.2	ND	58.4	ND	N/A	ND	N/A	N/A	N/A	**223.6**
	9/15/17		145	42.1	ND	74.3	ND	N/A	34.9	N/A	N/A	N/A	**296.3**
SW-5	5/2/17		794	391	ND	222	ND	N/A	296	N/A	N/A	N/A	1703
	9/19/17		648	1120	ND	336	ND	N/A	249	N/A	N/A	N/A	2353
SW-103	4/25/17		763	758	ND	233	ND	N/A	235	N/A	N/A	N/A	1989
	9/19/17		675	993	ND	336	ND	N/A	287	N/A	N/A	N/A	2291
SW-110	4/25/17		198	77.1	ND	68.3	ND	N/A	38	N/A	N/A	N/A	**381.4**
	9/13/17		88.6	68.2	ND	42.7	ND	N/A	57.2	N/A	N/A	N/A	**256.7**
SW-111	5/2/17		57	25.5	ND	ND	ND	N/A	ND	N/A	N/A	N/A	**82.5**
	9/19/17		26.6	23.9	ND	ND	ND	N/A	ND	N/A	N/A	N/A	**50.5**
SW-LR	5/1/17		ND	ND	ND	ND	ND	N/A	ND	N/A	N/A	N/A	**ND**
	9/13/17		ND	ND	ND	ND	ND	N/A	ND	N/A	N/A	N/A	**ND**
SW-881	5/2/17		178	88.1	ND	55.5	ND	N/A	36.9	N/A	N/A	N/A	**358.5**
	9/13/17		108	80.1	ND	51.3	ND	N/A	64.4	N/A	N/A	N/A	**303.8**
SW-882	5/2/17		293	176	ND	104	ND	N/A	80.7	N/A	N/A	N/A	**653.7**
	9/15/17		213	205	ND	88.2	ND	N/A	127	N/A	N/A	N/A	**633.2**

COMMUNITY IMPACT

Photos courtesy of Seacoast Media Group

- ABOUT 300 HOMES HAVE BEEN DEVELOPED WITH PRIVATE DRINKING WATER WELLS WITHIN A 2 MILE RADIUS OF THE DUMP IN THE PAST 20 YEARS.
- MANY OF THESE HOMES HAVE HEAVILY TAXED IRRIGATION SYSTEMS.
- THE 1,4 DIOXANE PLUME HAS MIGRATED OFF SITE AND RESIDENTS ARE CONCERNED THE PFAS PLUME HAS/WILL ALSO MIGRATE OFF SITE. WE ARE CONCERNED ABOUT OUR DRINKING WATER WELLS.
- RESIDENTS CURRENTLY HAVE DETECTIONS IN THE SINGLE DIGITS, TEENS, 20'S, AND 30'S PPT IN OUR WELLS. WE CAN'T SIT AND WAIT FOR OUR LEVELS TO HIT 70 PPT BEFORE WE HAVE ACCESS TO SAFE DRINKING WATER FOR OUR FAMILIES.

CHALLENGES

- IN JULY 2016, NHDES DECLARED THE REMEDY ONSITE NEEDED IMPROVEMENT TO REMAIN PROTECTIVE OF HUMAN HEALTH. DAYS LATER, EPA STATED THE REMEDY IS PROTECTIVE OF HUMAN HEALTH.
- EPA HAS DIRECTED CLG TO EXPAND MONITORING TO ASSESS GROUNDWATER FLOW IN AND AROUND THE DUMP. IT IS PROJECTED TO BE 2-5 YEARS BEFORE THIS STUDY IS COMPLETE.
- ONGOING TESTING OF RESIDENTIAL WELLS SURROUNDING THE DUMP ACCOUNTS FOR LESS THAN 6% OF HOMES WITHIN A TWO MILE RADIUS.

Photos courtesy of Seacoast Media Group

ACTION ITEMS

- COMPEL CLG TO PROVIDE ALL IMPACTED RESIDENTS ACCESS TO SAFE, ABUNDANT WATER.
- COMPEL CLG TO INSTALL AN EFFECTIVE REMEDIATION SYSTEM AT THE COAKLEY SITE. THE CURRENT PLAN FOR MONITORED NATURAL ATTENUATION WAS SET IN PLACE BEFORE THE DISCOVERY OF PFAS AND 1,4 DIOXANE.
- ENSURE THAT THE PFAS MAXIMUM CONTAMINANT LEVEL (MCL) THAT THE EPA COMMITTED TO AT ITS PFAS LEADERSHIP SUMMIT IN MAY IS AS STRONG AS POSSIBLE. THE MCL SHOULD BE SIGNIFICANTLY LOWER THAN THE EPA'S CURRENT 70 PPT ADVISORY LIMIT AND INCLUDE ALL OF THE CHEMICALS IN THE PFAS FAMILY.
- COMPEL CLG TO EXPAND RESIDENTIAL WELL TESTING TO EVERY HOME IN A PATHWAY DETERMINED THROUGH COLLABORATION WITH USGS, WITH TESTS PERFORMED BY AN INDEPENDENT BODY.
- COMPEL CLG TO INSTALL AND MAINTAIN FILTERS AT EVERY HOME WITHIN 2 MILES THAT REQUESTS THEM, AND AT NEARBY SCHOOLS. WE NEED FILTERS TO BE ABLE TO TRUST THE WATER THAT COMES OUT OF OUR TAP, BOTH IN OUR HOMES AND OUR SCHOOLS.

Westfield, Massachusetts

A PFAS Contamination Story

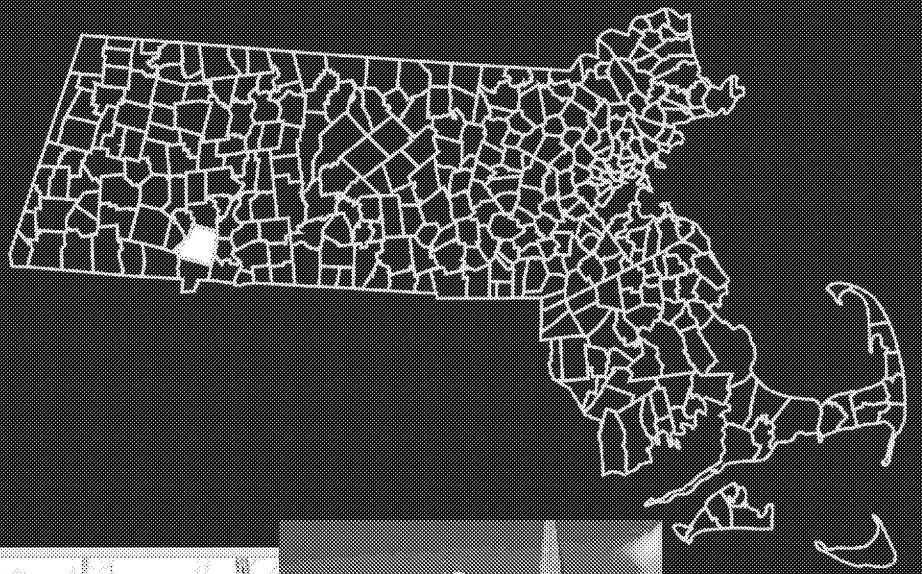
By Kristen Mello

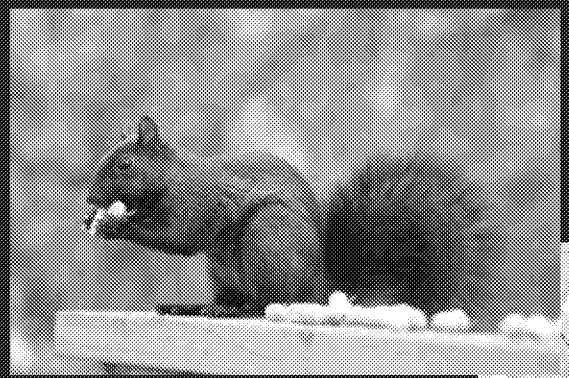
US EPA Region 1 Community Engagement Event
Exeter High School, Exeter, NH
Monday, June 25, 2018

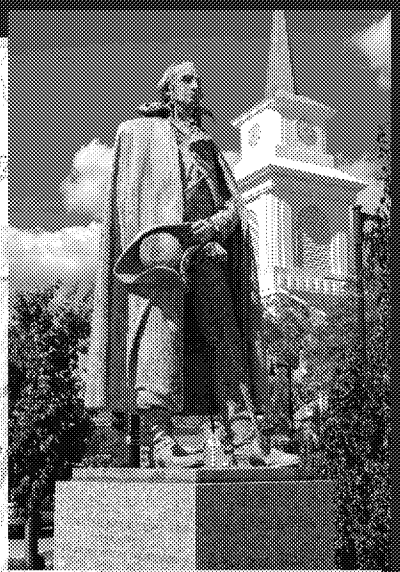
WESTFIELD RESIDENTS ADVOCATING FOR THEMSELVES

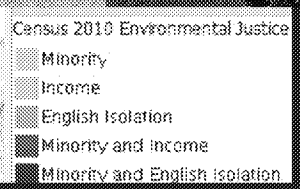
What about Westfield?

Population: 41,552 (2016 Census)





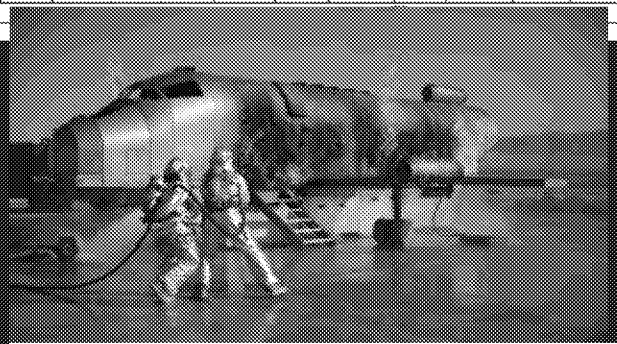


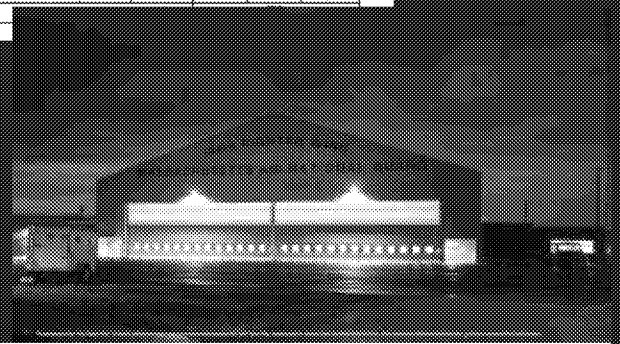


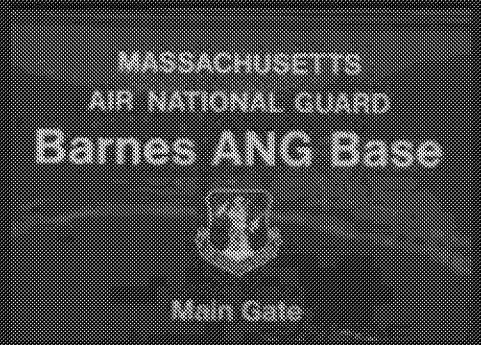
WESTFIELD RESIDENTS ADVOCATING FOR THEMSELVES

PFAS in Westfield

Area	Well 7 & 8 Wellfield																		Barnes Airport		
Well ID	PWS Well 7		7D/8S (R)	Well A	Well B		Well C		Well F	Well J		Well K		Well L		Well M		Well N		MW-7A	MW-7B	MW-7D
Screen Depth (ft.) / Type	122 (est.) / Deep		122 / Deep	138.5 Deep	29.2 / Shallow		127.9 / Deep			139.5 / Deep		14.4 / Shallow		129.8 / Deep		12.5 / Shallow		19.5 / Shallow		117.9 / Deep	79.3 / Intermediate	37.5 / Shallow
Sample Date	2/27/13	8/19/13	6/22/16	03/13/17	6/22/16	03/13/17	6/22/16	03/13/17	03/13/17	6/22/16	03/13/17	6/22/16	03/13/17	6/22/16	03/13/17	6/22/16	03/13/17	6/22/16	03/13/17	6/22/16		
Perfluorobutane sulfonic acid (PFBuS)	< 2.7	< 30	38	7.4	8.8	14	12	19	4.1	11	19	< 0.65	< 0.65	10	12	6.5	8.5	51	65	38	100	12
Perfluorohexanoic acid (PFHxA)	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Perfluorohexane sulfonic acid (PFHxS)	170	100	310	55	120	160	200	230	32	130	160	1.4*	2.4	120	150	39	150	240	280	310	650	240
Perfluoroheptanoic acid (PFHpA)	11	< 3.3	29	5.2	15	16	23	27	2.5	13	16	< 0.74	< 0.74	12	12	4	3.5	17	19	29	42	12
Perfluorooctane sulfonic acid (PFOS)	**160**	**120**	**540**	**140**	**160**	**230**	**320**	**410**	27	**150**	**230**	< 1.2	< 1.2	**130**	**150**	50	45	49	80	**540**	**1200**	**200**
Perfluorooctanoic acid (PFOA)	43	28	**140**	15	50	57	**96**	**110**	9.2	48	63	1.5*	1.3*	40	40	14	40	22	27	**140**	**73**	18
Perfluorononanoic acid (PFNA)	< 0.6	< 0.67	1.6*	NS	0.73*	1.0*	1.3*	1.4*	NS	0.60*	1.3*	< 0.61	< 0.61	< 0.63	< 0.64	0.71*	NS	< 0.58	NS	1.6*	4.4	1.3*
Total PFAS	380	250	1100	220	360	480	650	800	75	360	490	3.7	2.9	310	360	110	250	380	470	1100	2100	480
PFOS + PFOA	**200**	**150**	**680**	**160**	**210**	**290**	**420**	**520**	36	**200**	**290**	1.5	1.3	**170**	**190**	64	**85**	71	**110**	**680**	**1300**	**220**
PFOS + PFOA + PFHxS + PFHpA + PFNA	380	250	1800	220	350	480	648	780	71	340	470	2.9	3.7	300	350	110	248	330	410	1600	2600	470
U.S. EPA Health Advisory Level	70																					



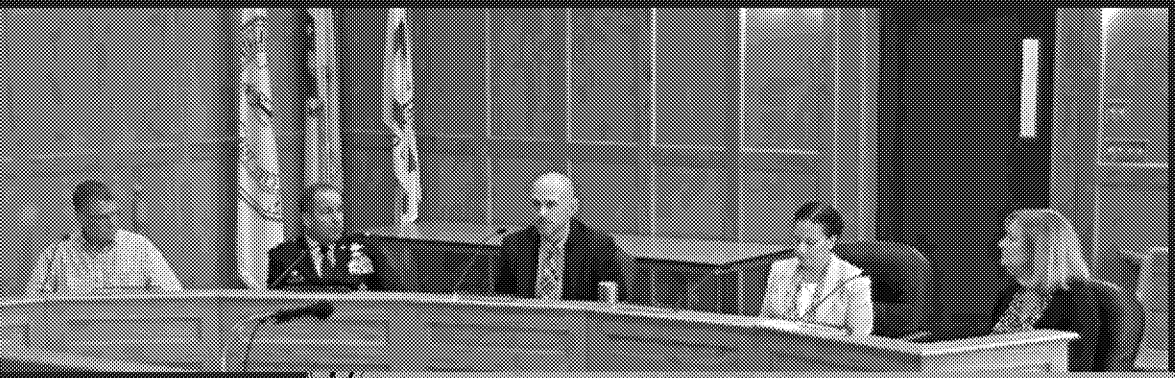




Potential Release Location (PRL)	1	3	4	6		7	8
Location	TW-03	MW-8	TW-02	TW-01		TW-05	TW-04
	Former Fire Training Area, IRP Site 1	Stormwater Drainage Basin	Hangars 27A & 27B	Current Fire Station, Building 040		Hush House	Fire Department Equipment Test Area
Sample ID	BARNS-01-GW-TW03-062917-37	MW-8-063017-25	BARNS-04-GW-TW02-062917-30	BARNS-06-GW-TW01-062917-37	BARNS-06-GW-TW01-062917-Dup	BARNS-07-GW-TW05-062917-49	BARNS-08-GW-TW04-063017-36
Sample Depth (ft.)	37.0-37.0	25.0-25.0	30.0-30.0	37.0-37.0	37.0-37.0	49.0-49.0	37.0-37.0
Sample Type	N	N	N	N	FD	N	N
Sample Date	06/29/17	06/30/17	06/28/17	06/28/17	06/28/17	06/29/17	06/30/17
Perfluorobutane sulfonic acid (PFBuS)	12.6	5.17 U	3.58 J	39.5	42.6	53.5	5.08 U
Perfluorohexanoic acid (PFHxA)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Perfluorohexane sulfonic acid (PFHxS)	319	10.9	30.5	641	737	694	19.6
Perfluoroheptanoic acid (PFHpA)	28.7	5.17 U	5.05 J	20	23.8	27.5	5.08 U
Perfluorooctane sulfonic acid (PFOS)	**181**	6.64 J	**99.4**	**609 J**	**950 J**	**634**	3.8 J
Perfluorooctanoic acid (PFOA)	45.5	2.78 J	5.2 J	69.9	79.3	59.7	5.08 U
Perfluorononanoic acid (PFNA)	4.32 J	5.17 J	5.25 J	5.04 U	5.04 U	5.0 U	5.08 U
Total PFAS	510	26	150	1400	1800	1500	23
PFOS + PFOA	**150**	9.6	**100**	**680**	**1000**	**690**	3.8 J
PFOS + PFOA + PFHxS + PFHpA + PFNA	500	26	150	1380	1800	1400	23
U.S. EPA Health Advisory Level	70						

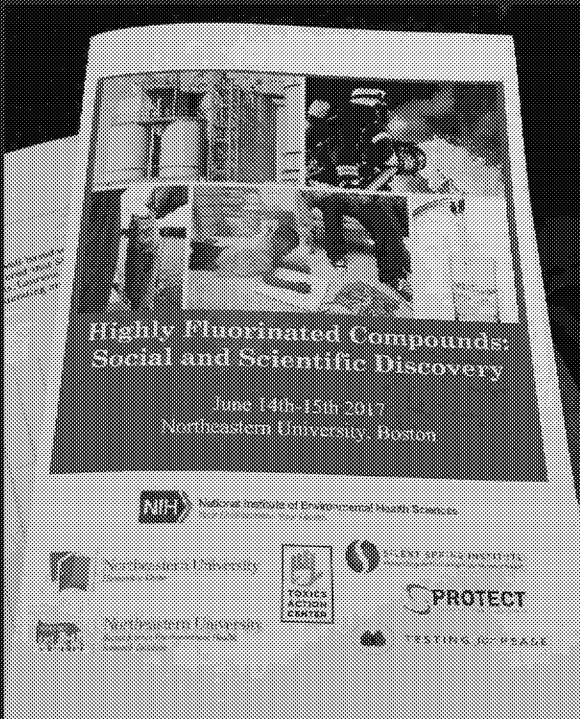
WESTFIELD RESIDENTS ADVOCATING FOR THEMSELVES

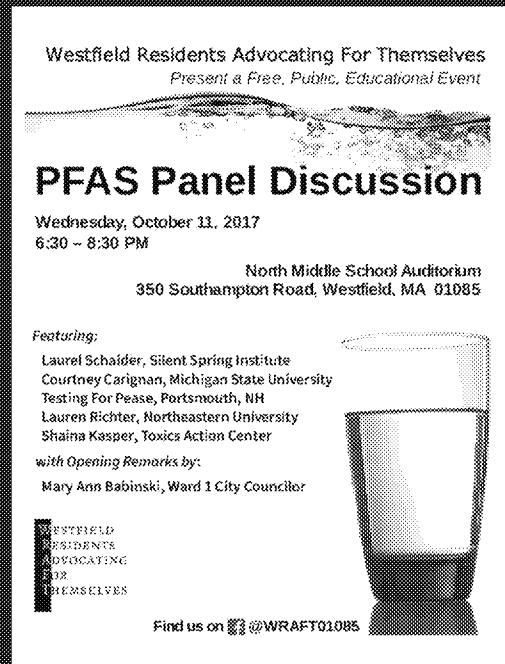
Official Response

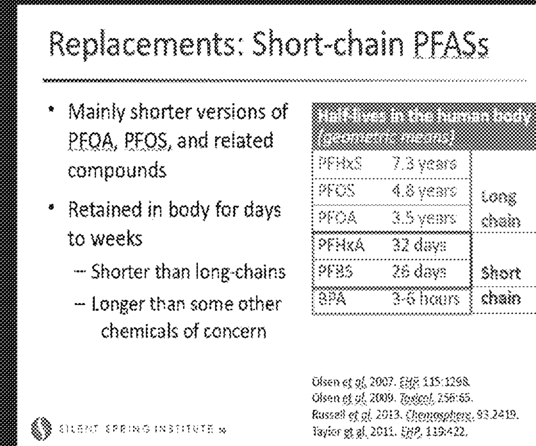


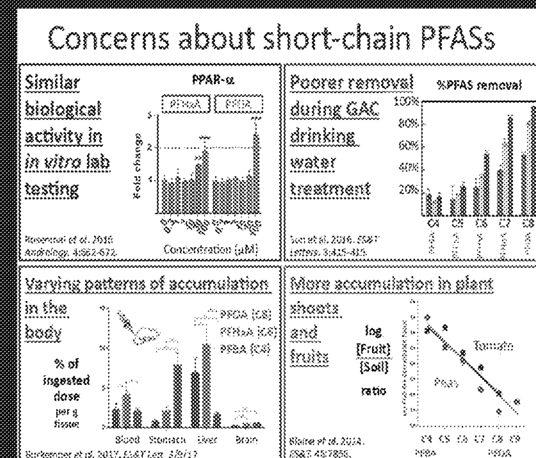
WRAFT
WESTFIELD
RESIDENTS
ADVOCATING
FOR
THEMSELVES

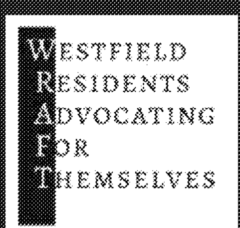
Community Response











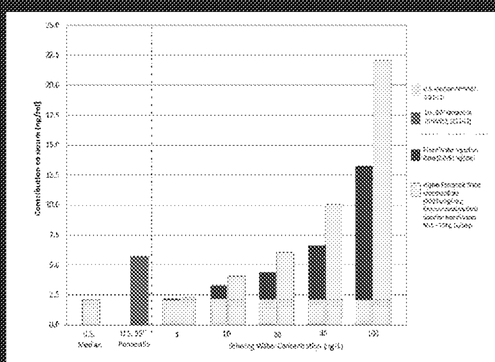
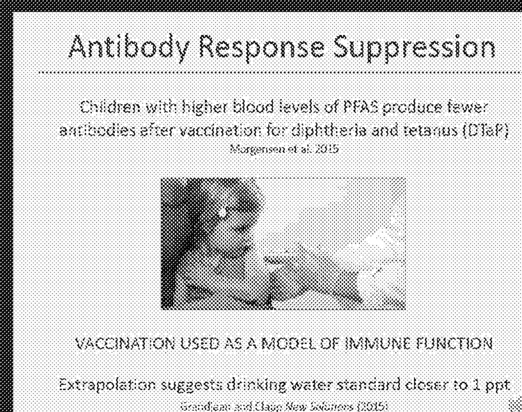
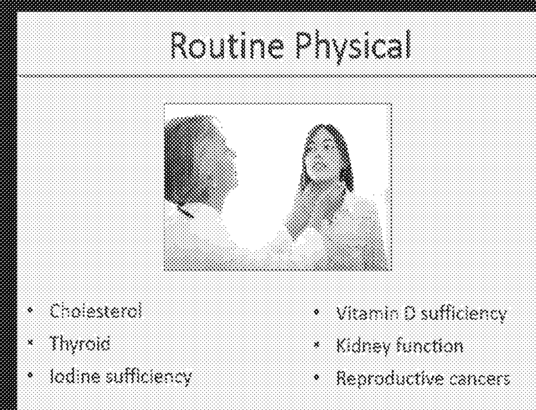
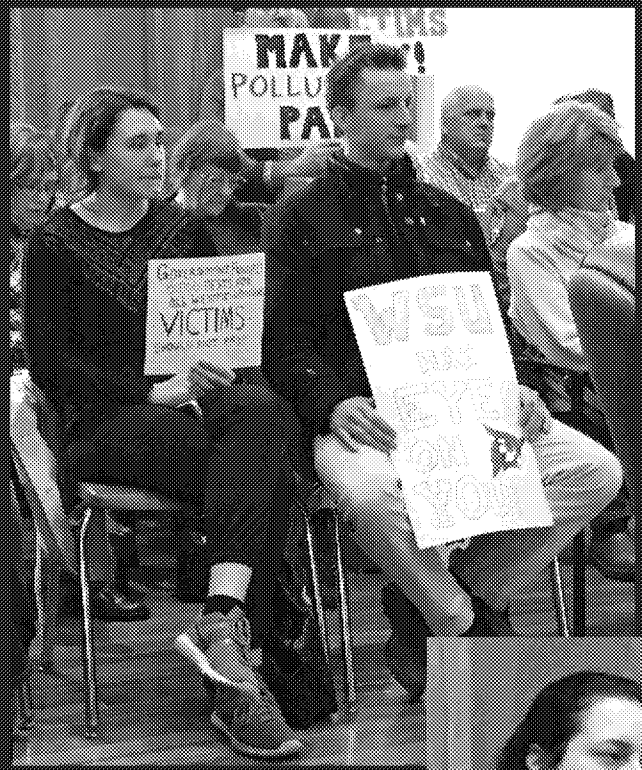


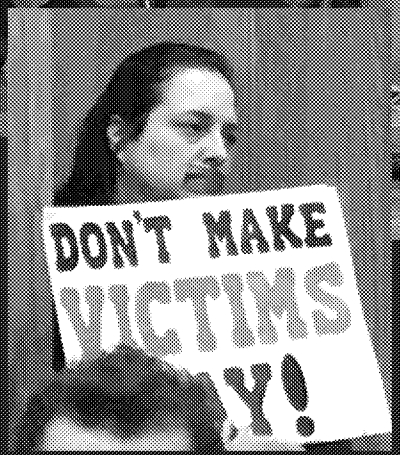
Figure E-1. Increases in serum PFOA concentrations predicted from mean and upper percentile consumption of drinking water with various concentrations of PFOA, as compared to U.S median and 95th percentile serum PFOA levels (NHANES, 2011-12).





Community Response





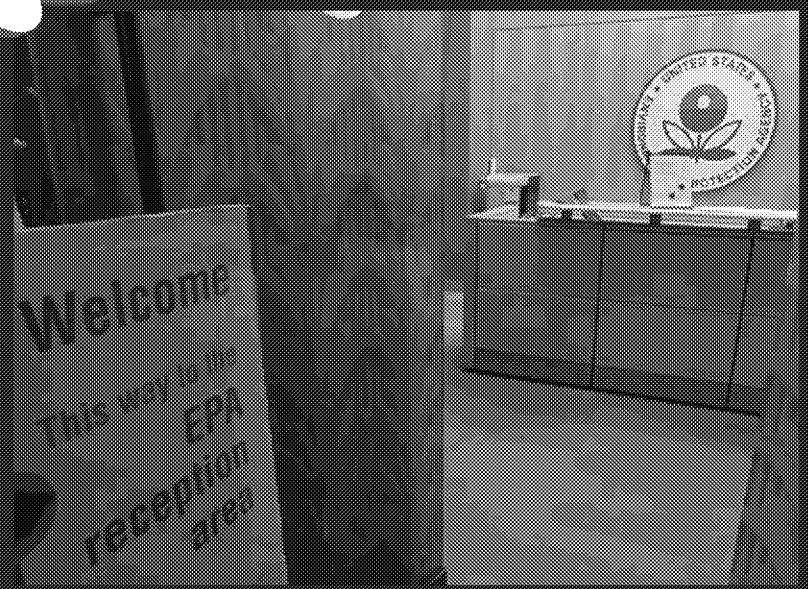
WESTFIELD RESIDENTS ADVOCATING FOR THEMSELVES

WE'RE PFAS'D OFF!!!

AND WE'RE NOT GONNA DRINK IT ANYMORE!

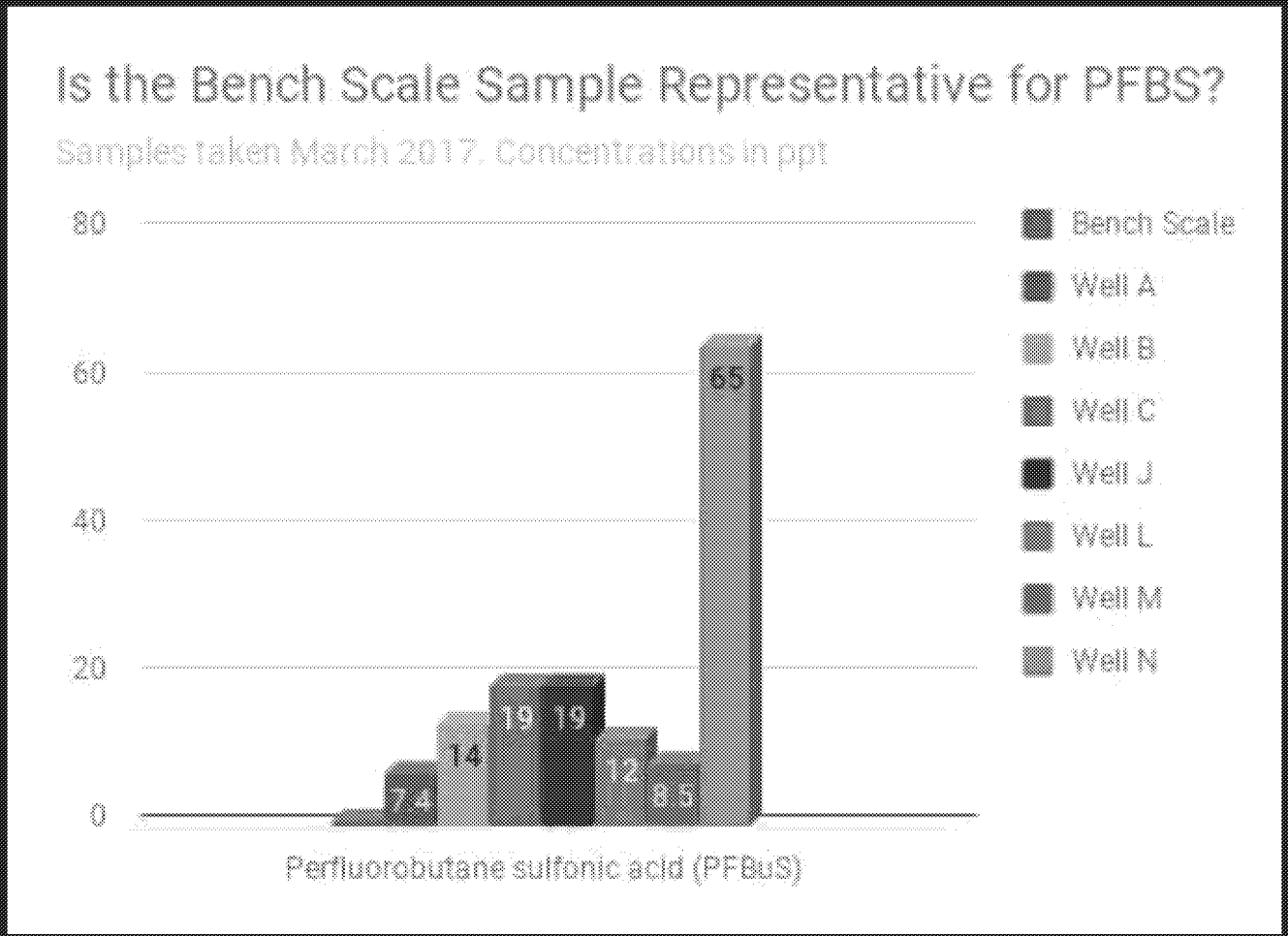
Community Response

MassDEP



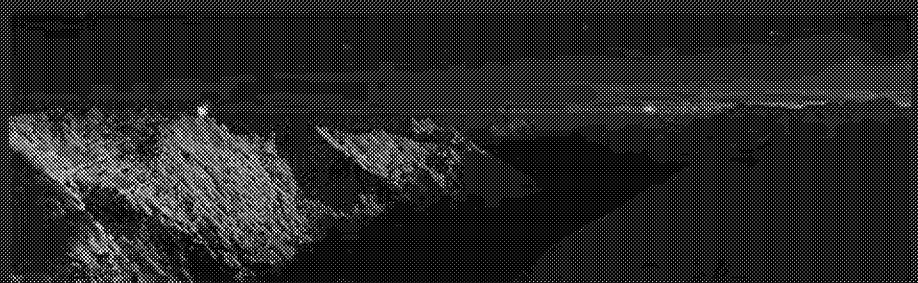
WESTFIELD RESIDENTS ADVOCATING FOR THEMSELVES

Challenges For Westfield



WESTFIELD RESIDENTS ADVOCATING FOR THEMSELVES

Community Needs



A PFAS-free Water Supply

Legal Framework to Make Polluters Pay

PFAS Testing: blood, food, surface water

Biomonitoring and Health Supports

WESTFIELD RESIDENTS ADVOCATING FOR THEMSELVES

MassDEP

New England Grassroots Environmental Fund

Testing for Pease, GreenCAPE, Greenland Safe Water Action, and Merrimack Citizens for Clean Water

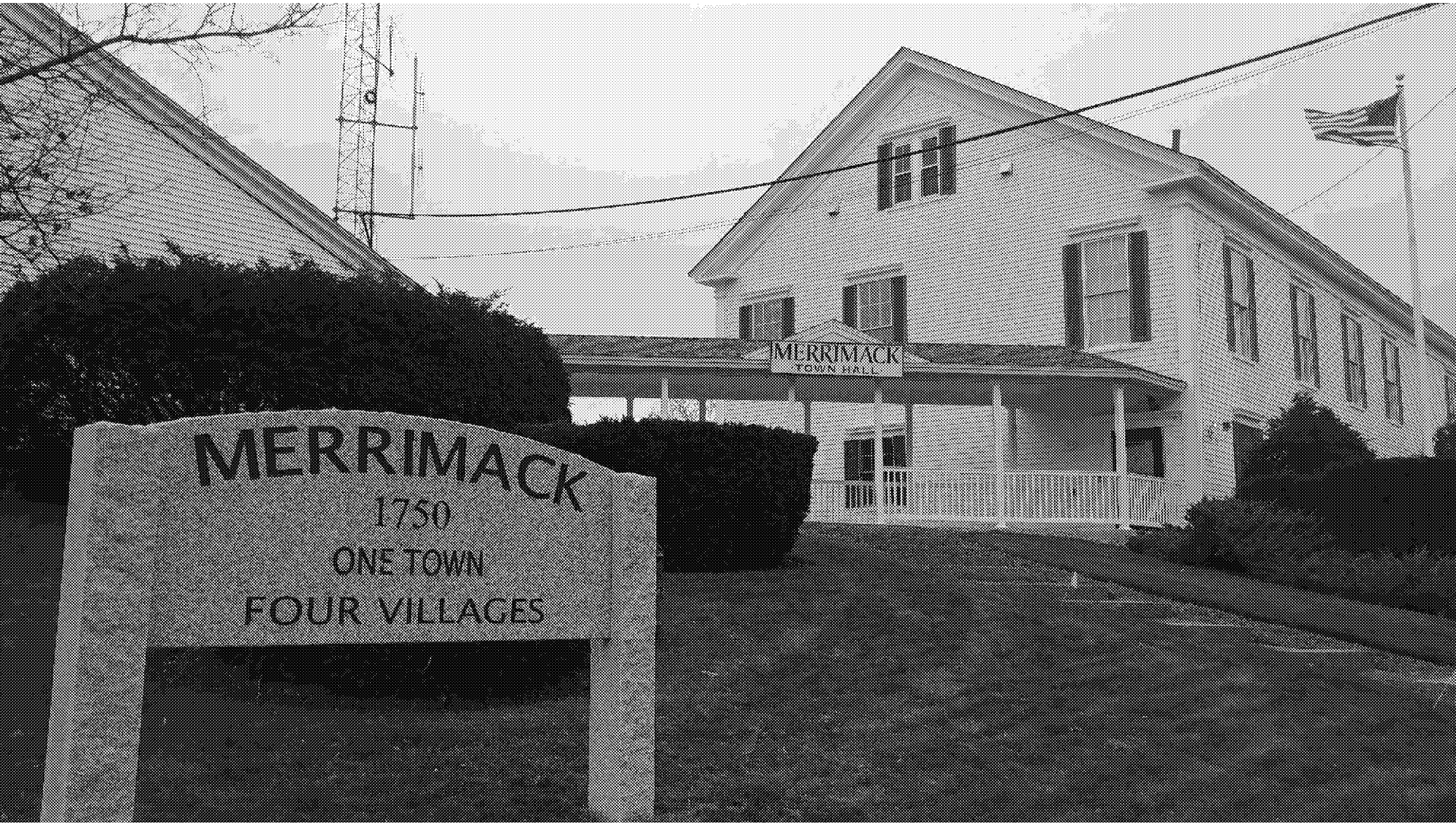
Toxics Action Center

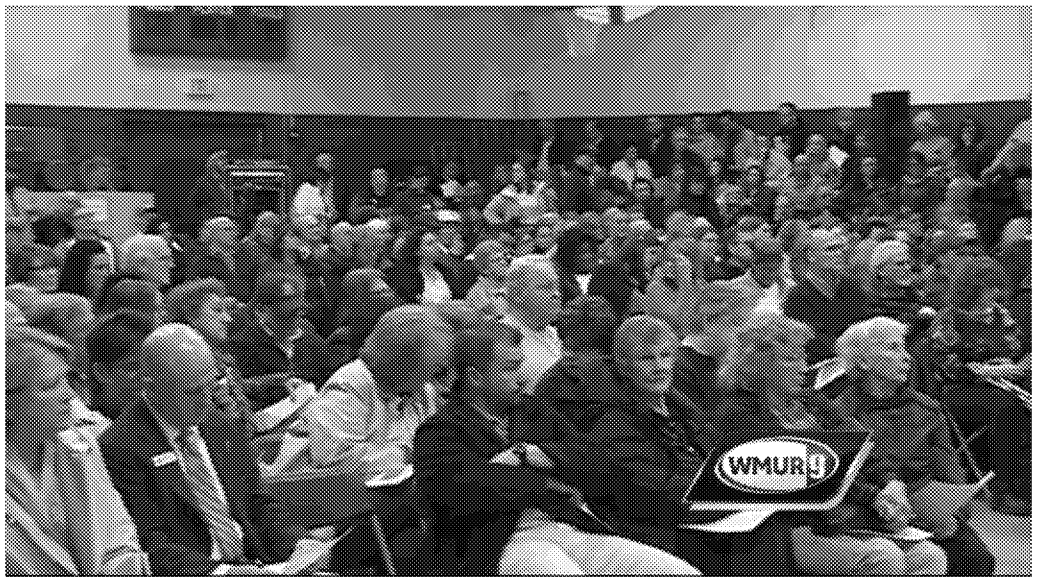
National PFAS Contamination Coalition

UMASS Amherst School of Public Health Health and Health Sciences

WESTFIELD RESIDENTS ADVOCATING FOR THEMSELVES

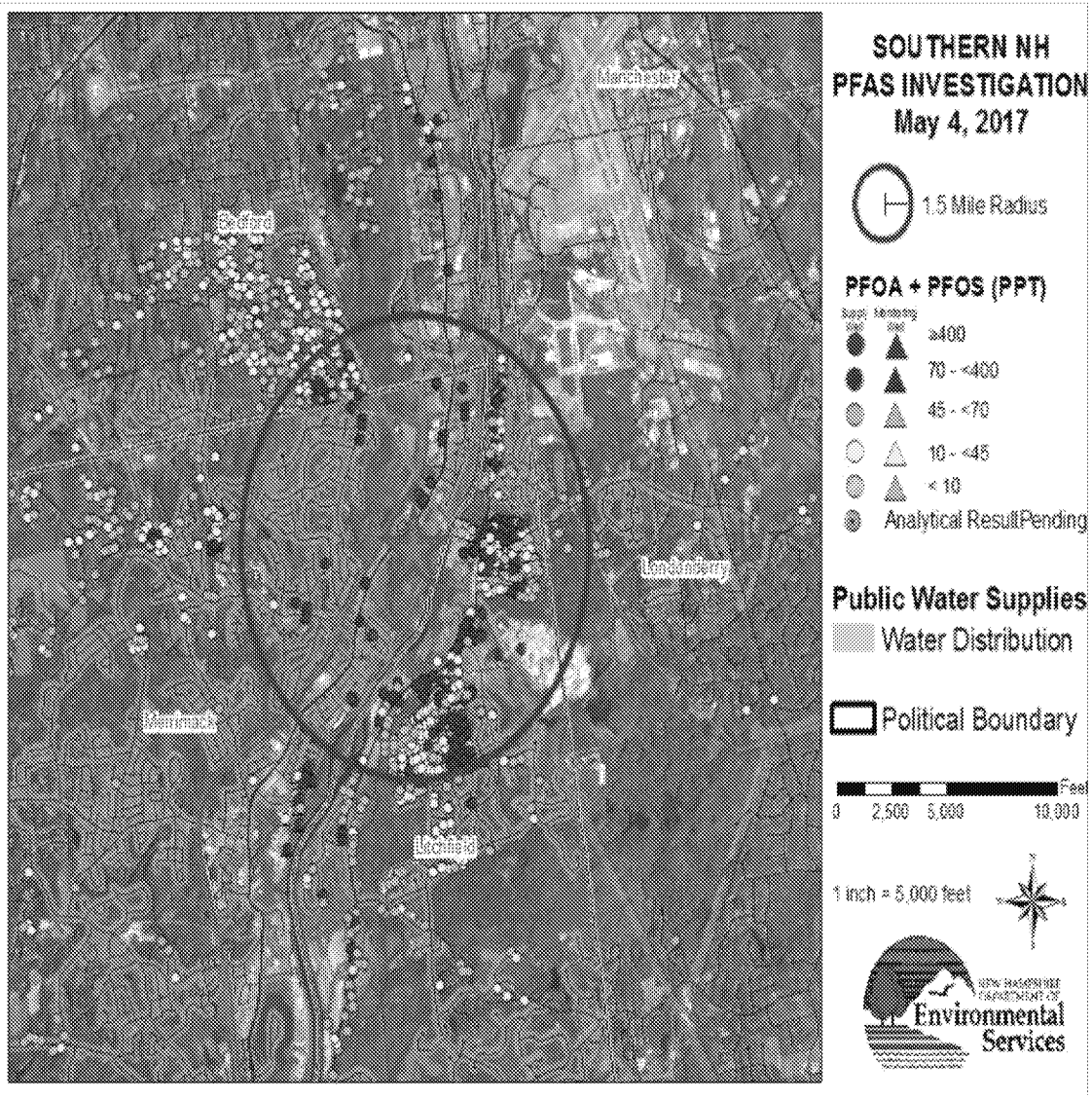
*. . . and to **you** for listening to our story!*


MERRIMACK
1750
ONE TOWN
FOUR VILLAGES
MERRIMACK
TOWN HALL



News coverage of Merrimack PFOA Information Meeting
March 23, 2016

NHDES Contamination Map



Merrimack Private Wells

21 Private Wells > 70ppt PFOA

50 Private Wells > 20ppt PFOA

Private wells falling within the 1.5mi radius

Merrimack Public Wells

Wells 2/3 avg > 13ppt PFOA

Wells 4/5 avg > 70ppt PFOA

Wells 7/8 avg > 25ppt PFOA

Public wells serve 25,500 water users.

ATSDR 6/20/18 Draft MRLs

PFOA: 11ppt

PFOS: 7 ppt

PFNA: 10.5ppt

PFHxS: 70ppt

Critical Reviews in Toxicology

http://informahealthcare.com/txc
ISSN: 1040-8444 (print), 1547-6898 (electronic)

Crit Rev Toxicol, 2014; 44(S1): 1–81
 DOI: 10.3109/10408444.2014.905767

informa
healthcare

REVIEW ARTICLE

A critical review of perfluorooctanoate and perfluorooctanesulfonate exposure and cancer risk in humans

Ellen T. Chang[1], Hans-Olov Adami[2], Paolo Boffetta[3], Philip Cole[4], Thomas B. Starr[5], and Jack S. Mandel[1]

- The toxicology review above by Chang and colleagues was funded by the 3m company, a PFC manufacturer.
- The toxicological profile to the right by CDC/ATSDR is an independent review of the science.

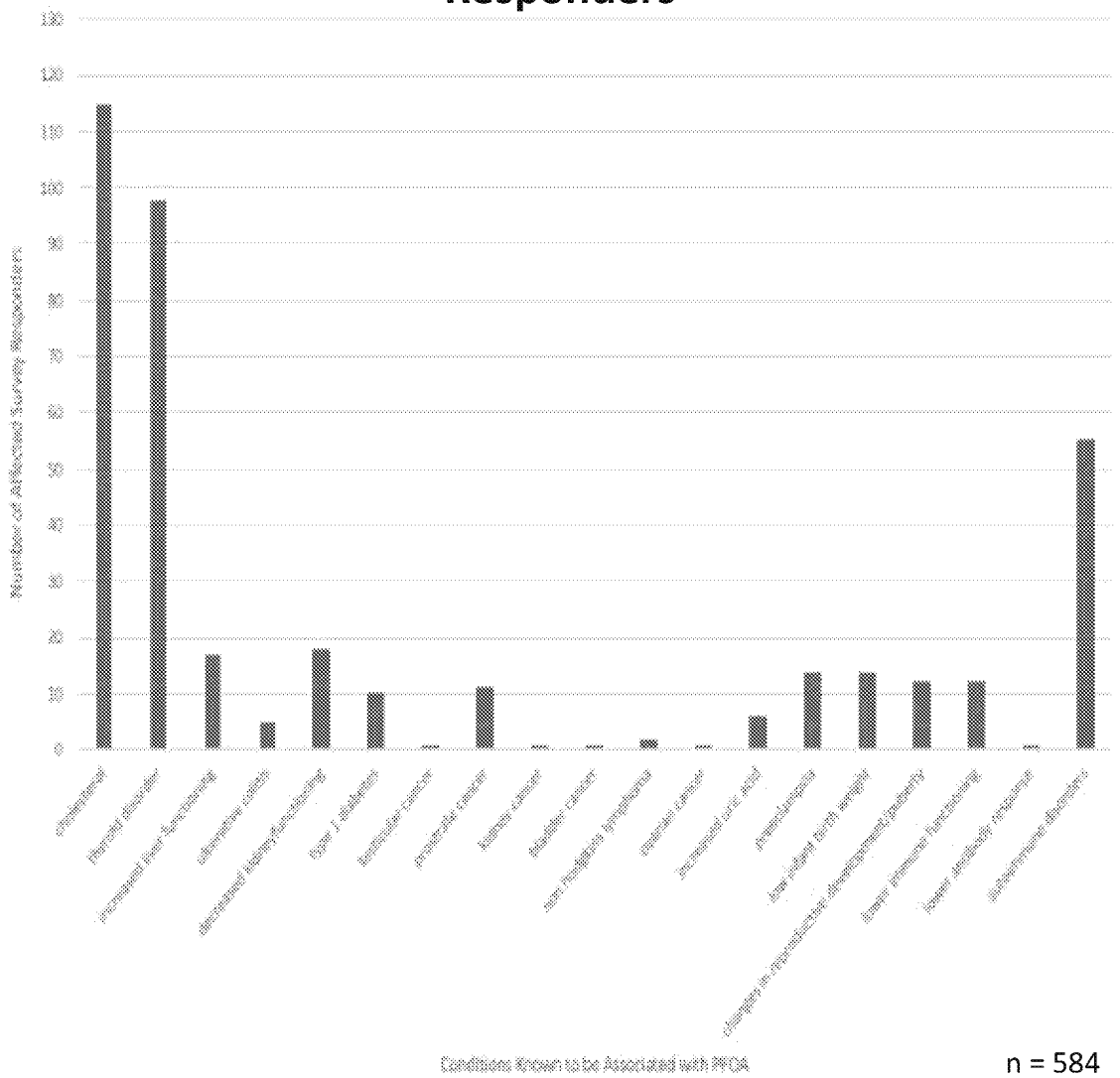
DRAFT
TOXICOLOGICAL PROFILE FOR
PERFLUOROALKYLS

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Agency for Toxic Substances and Disease Registry

August 2015

NH DIVISION OF Public Health Services
Improving health, preventing disease, reducing costs for all
New Hampshire Department of Health & Human Services

PFOA-Affiliated Conditions Reported by Survey Responders



n = 584

Impacts to the human body include:

Thyroid hormone level changes
Increases in cholesterol levels
Ulcerative colitis
Testicular cancer
Kidney cancer
Prostate cancer
Pregnancy-induced hypertension
Elevated liver enzymes
Increases in uric acid levels
Lower immune function
Changes in reproductive development and puberty
Low birth weight
Autoimmune disorders

NH DHHS Limited MVD Random Blood Testing

- A NH DHHS conducted random blood sampling of 217 Merrimack MVD public water consumers (2016-17) reported the following blood serum averages:
  - PFOA: 3.9 ug/l (over 2 times the 2014 national average)
  - PFOS: 5.5 ug/l
  - PFHxS: 1.3 ug/l

- Merrimack public water consumers who reported consumption of 8+ cups of tap water per day averaged:
  - PFOA: 4.7 ug/l (2.5 times the 2014 national average)

- Merrimack public water consumers within 1.5 miles of Saint Gobain/Wells 4 and 5 averaged:
  - PFOA: 6.3 ug/l (3+ times the 2014 national average)

Merrimack NH Cancer Incident Report

Prepared by NH DHHS

Table 2. Observed and Expected Numbers of Cancer Cases, Merrimack, NH, 2005-2014*

Cancer Type/Site	Observed	Expected	Significant Difference
Oral Cavity and Pharynx	28	33	Not significantly different
Esophagus	20	18	Not significantly different
Stomach	13	14	Not significantly different
Colorectal	115	101	Not significantly different
Liver and Intrahepatic	12	15	Not significantly different
Pancreas	30	30	Not significantly different
Gall Bladder	<5	<5	Not significantly different
Larynx	9	10	Not significantly different
Lung and Bronchus*	138	152	Not significantly different
Mesothelioma	6	<5	Not significantly different
Females Only:			
Breast	197	203	Not significantly different
Cervical	5	8	Not significantly different
Uterus	55	49	Not significantly different
Ovary	17	18	Not significantly different
Males Only:			
Prostate*	198	173	Not significantly different
Testis	8	9	Not significantly different
Bladder	79	68	Not significantly different
Kidney and Renal Pelvis	51	41	Not significantly different
Brain and Other CNS	22	20	Not significantly different
Thyroid	52	41	Not significantly different
Hodgkin Lymphoma	5	8	Not significantly different
Non-Hodgkin Lymphoma	48	54	Not significantly different
Kaposi Sarcoma	<5	<5	Not significantly different
Multiple Myeloma	14	15	Not significantly different
Leukemia	43	36	Not significantly different
Melanoma of Skin	61	75	Not significantly different
Other Cancers	95	95	Not significantly different

Saint Gobain Storm Drain Outfall 6/29/17

PFOA: 1820ppt

PFHxA: 1170ppt

PFPeA: 565ppt

PFHPA: 561ppt

PFOS: 206ppt

PFBA: 158ppt

PFNA: 25ppt

PFHXS: 23ppt

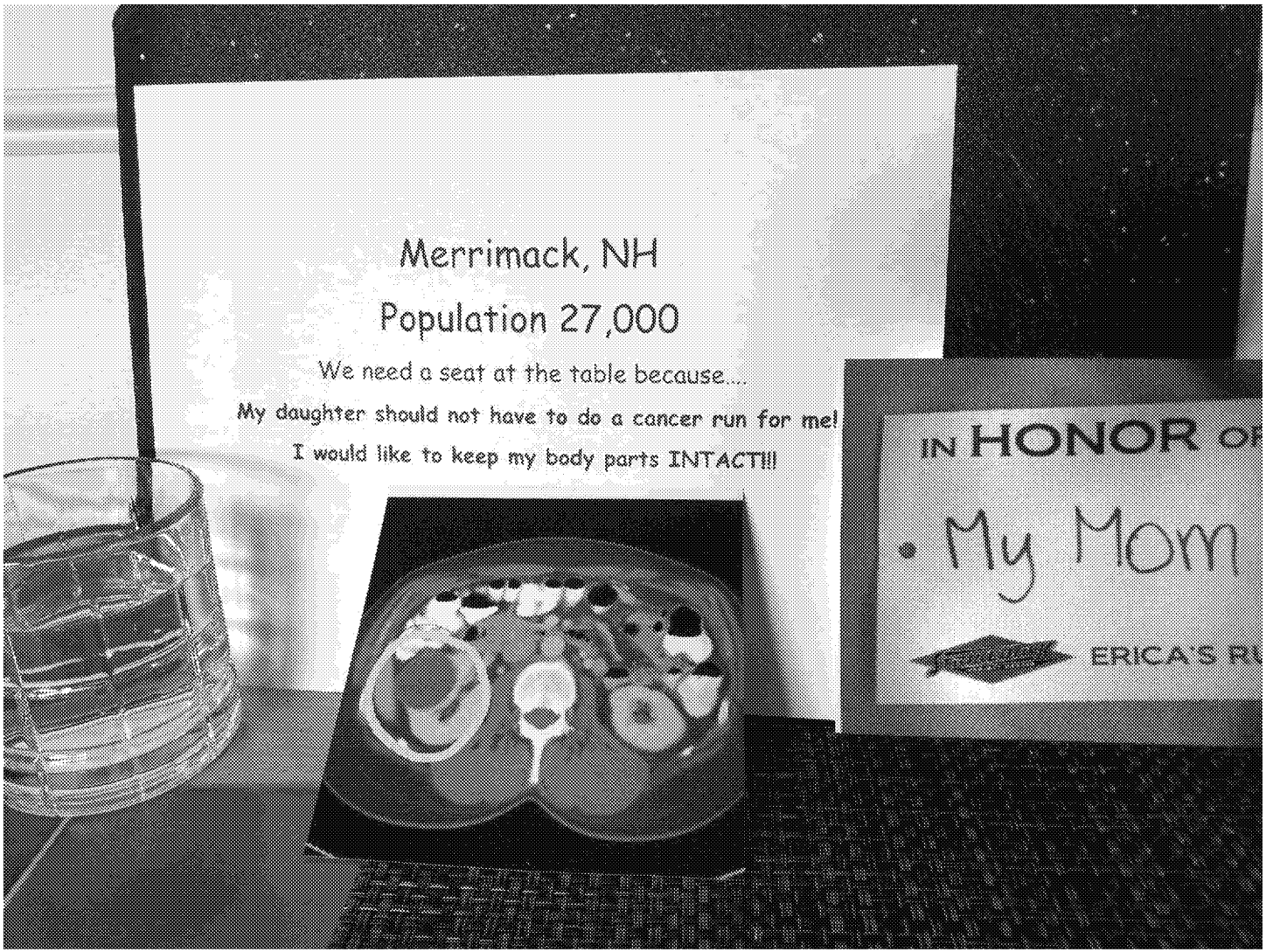
PFBS: 9ppt

“This is not how we expected to celebrate Father’s Day but love is love, doesn’t matter where you are.”

"My son was diagnosed with Rhabdomyosarcoma in October 2014 and is only 25 years old. As a mom trying to do the right thing for my child I encouraged them to drink water throughout their childhood in order to be healthy.

There is no excuse for the agency that is supposed to protect human health to knowingly do the opposite. Get PFAS out of the air, water, and soil. It is your duty. All my son ever wanted to do was grow up and defend his country and he joined the military, only to be told within a year of enlisting that he has cancer and cannot stay in the military. This is a terminal cancer, he cannot live out his dreams…

I have many unanswered questions and so does my son. How many people have to suffer before something is done?"


Merrimack, NH
Population 27,000
We need a seat at the table because....
My daughter should not have to do a cancer run for me!
I would like to keep my body parts INTACT!!!
IN HONOR OF
• My Mom
ERICA'S RU